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ABSTRACT

This final report for Columbia Basin College's waste management technician partnership program outlines 4 objectives: (1) develop at least 4 waste management competency-based curriculum modules; (2) have 50 participants complete at least 1 module; (3) have 100 participants complete a training and/or certification program and 200 managers complete business/industry workshops/seminars; and (4) identify and document 10 specialists, provide inservice training to instructional staff, and have 1 faculty member participate in an internship. By June 1991, all objectives except the faculty internship were accomplished. The bulk of this document consists of eight appendices: advisory committee membership/meeting minutes; needs survey; curriculum outline/course descriptions; course offerings/enrollment; workshop brochures; specialists/technical assistance membership list; dissemination conference programs; and final budget report. The document also contains a timeline of significant accomplishments and a brochure on Columbia Basin College's Hazardous Materials Management Technology project. (NLA)

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COLUMBIA BASIN COLLEGE

FINAL REPORT

GRANT # V199A0079

U. S. DEPARTMENT OF EDUCATION DEMONSTRATION PROJECT
HIGH TECHNOLOGY

COLUMBIA BASIN COLLEGE
2600 N 20TH
PASCO, WASHINGTON 99301

WASTE MANAGEMENT TECHNICIAN PARTNERSHIP PROGRAM

PREPARED BY

DONNA CAMPBELL

PROJECT DIRECTOR

DECEMBER 15, 1991

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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FINAL REPORT

COLUMBIA BASIN COLLEGE

U.S. DEPARTMENT OF EDUCATION COOPERATIVE DEMONSTRATION PROJECT HIGH TECHNOLOGY

GRANT # V199A00079
3/1/90 - 11/30/91

INTRODUCTION

On March 1, 1990, Columbia Basin College, in Pasco, Washington received a grant from the Department of Education in the amount of $83, 0873.00. The grant was in response to a proposal to develop a Hazardous Materials Management Technician Program.

Donna Campbell, Instructional Director of the Math Science Division, was the Project Director at the college. Robert L. Miller and Linda Kinney were project staff assigned by the Department of Education.

Implementation of the grant started out slowly. The primary difficulty was in recruiting, and retaining a qualified project coordinator. That obstacle was solved in February with the employment of Dr. Kenneth Ferrigno. With his arrival the college made excellent progress in achieving the objectives of the grant. Substantially all objectives were met. The program is now functional. The college has implemented the two year Associate Degree Program, and has offered a variety of short courses and workshops.

The college has supported the program offerings through the use of these grant monies, local funds, and acquisition of additional grants. The Department of Education Grant was the initial seed money. Without it, development of the program would have been much more difficult.

OBJECTIVES

1.1 BY JUNE 30, 1991, A MINIMUM OF 10 PRIVATE SECTOR BUSINESSES WILL HAVE PARTICIPATED IN A PARTNERSHIP TO DEVELOP A WASTE MANAGEMENT CURRICULUM AS MEASURED BY: 1. A LETTER OF AGREEMENT TO HAVE A REPRESENTATIVE ON A STEERING COMMITTEE, AND 2. A 75% PARTICIPATION RATE AT COMMITTEE MEETINGS.

Columbia Basin College established an advisory committee made up of members representing a broad segment of the business community of the service area. That committee functioned well, providing the input necessary to develop curriculum and advise on short course offerings. Members also helped in

securing additional funding, faculty for offerings, and equipment loans/donations. A list of committee membership and minutes from the meetings may be found in Appendix A.

1.2 BY JUNE 30, 1991, PROJECT STAFF IN COOPERATION WITH THE PARTNERSHIP STEERING COMMITTEE AND THE COLLEGE CURRICULUM REVIEW COMMITTEE WILL MODIFY, ADAPT OR DEVELOP A MINIMUM OF FOUR COMPETENCY BASED CURRICULUM MODULES BASED ON A PRE-IDENTIFIED PRIORITY OUTLINE AS MEASURED BY COMPLETED AND FIELD TESTED MODULES THAT ARE ACCEPTED AND APPROVED BY THE PARTNERSHIP STEERING AND COLLEGE CURRICULUM REVIEW COMMITTEES.

Curriculum development was a major focus of the project. The advisory committee(steering committee) provided good input. Two surveys were also completed, one of all employers in the state of Washington done in cooperation with our local university. The purpose of this survey was to establish the educational level of workers needed. It was clear from the data, two year technicians were in great demand. The second survey included local industries, and was intended to establish needs locally in terms of workshop topics et cetera.That survey was done by the HMMT program manager. A copy of that survey can be found in Appendix B.

Utilizing input from the advisory committee, expertise of the program manager, curriculum materials from other community college HMMT programs and survey results, a curriculum was developed. The curriculum outline, and course descriptions can be found in Appendix C.

Approval of the curriculum was accomplished at the following levels on the dates listed.

ADVISORY COMMITTEE APPROVAL	11/1/90
COLUMBIA BASIN COLLEGE CURRICULUM COMMITTEE	1/28/90
COLUMBIA BASIN COLLEGE BOARD OF TRUSTEES	2/4/91
WASHINGTON STATE BOARD FOR COMMUNITY COLLEGE EDUCATION	5/15/91

2.1 BY JUNE 30, 1991, AT LEAST 50 PARTICIPANTS WILL HAVE COMPLETED AT LEAST ONE MODULE OF THE WASTE MANAGEMENT TECHNOLOGY COMPETENCY BASED CURRICULUM OFFERINGS AS MEASURED ON THE FIELD TEST MANAGEMENT RECORD FORM.

Columbia Basin College began offering HMMT classes Spring Quarter 1991. Classes commenced March 25, 1991. Enrollment pressure was high. Class offerings were fully enrolled the first day they were opened. Demand has continued to be high. Current enrollment is in excess of 100 in HMMT classes. There are also a number of students taking academic classes required for the program, waiting for space in HMMT class.

Several classes have been offered each quarter. A complete listing by title, quarter and enrollment may be found in Appendix D.

3.1 BY JUNE 30, 1991, 100 INDIVIDUALS WILL ACCESS AND COMPLETE EITHER A SHORT COURSE TRAINING PROGRAM AND/OR A CERTIFICATION SEMINAR AS MEASURED AND DOCUMENTED ON THE FIELD TEST MANAGEMENT REPORT FORM.

3.2 BY JUNE 30, 1991, 200 INDIVIDUALS WILL ACCESS AND COMPLETE SPECIAL WORKSHOP AND SEMINARS DESIGNED FOR MANAGERS OF INDUSTRY AND INDUSTRY/BUSINESS AND GOVERNMENT.

When the Advisory committee was set up, a sub-committee on short courses was established. That committee provided input and advise on offerings, faculty and marketing to the project coordinator. As stated earlier, a survey of local industry was also conducted to determine needs. A number of offerings were conducted during the grant period. Attendance varied, but was generally good. A list of offerings, and attendance may be found in Appendix E. Also included is copies of brochures used to market the workshops.

4.1 BY JUNE 1, 1990, A CADRE OF AT LEAST 10 SPECIALISTS WILL BE IDENTIFIED IN VARIOUS AREAS OF WASTE MANAGEMENT TECHNOLOGY FROM THE BUSINESS/INDUSTRY AND GOVERNMENTAL SECTORS OF THE COMMUNITY AS DOCUMENTED ON A COMMUNITY TRAINING RESOURCE LISTING

Columbia Basin College did develop a list of specialists in excess of 10 members. In published material, the availability of the list was made known. Advisory Committee members were also kept informed. A list of the experts agreeing to serve on this panel of specialists may be found in Appendix F.

4.2 BY JUNE 30, 1991, ALL COLLEGE AND/OR INDUSTRY INSTRUCTIONAL STAFF WHO INSTRUCT IN THE WASTE MANAGEMENT TECHNICIAN MODULES WILL RECEIVE AT LEAST 25 HOURS OF INSERVICE TRAINING AS DOCUMENTED ON A RECORD OF ATTENDANCE AND COMPLETION.

Faculty have been selected for their expertise in the area of HMMT. Inservice has been limited to helping individual instructors develop teaching skills and expertise. Most of this has been done on 1:1 basis. Some instructional staff have attended scheduled workshops in the HMMT area. Dr. Ferrigno attended an educational conference in Nevada.

4.3 BY JUNE 30, 1991, AT LEAST ONE CBC FACULTY MEMBER WILL PARTICIPATE IN A WASTE MANAGEMENT INDUSTRY INTERNSHIP AS DOCUMENTED BY A RECORD OF INVOLVEMENT AND CONTRACTS WITH PRIVATE INDUSTRY.

This objective was not achieved. The college was unable to

identify an appropriate internship. Efforts to achieve this objective are on-going. However, because of the workload of the project coordinator with the day to day management of the entire HMMT program, it is not anticipated this will happen any time soon.

DATES OF SIGNIFICANT ACCOMPLISHMENTS

DATE	EVENT/ACCOMPLISHMENT
3/1/90	GRANT AWARDED
5/11/90	INTERACTIVE TELECONFERENCE "ASK THE EXPERTS"
5/18/90	DEE LLOYD PROGRAM COORDINATOR BEGAN EMPLOYMENT
6/11-12/90	DONNA CAMPBELL ATTENDED AND PRESENTED CURRICULUM PLANNING INFORMATION AT DEPARTMENT OF ENERGY WORKSHOP IN DENVER, "ENVIRONMENTAL RESTORATION WASTE MANAGEMENT TECHNICAL EDUCATION WORKSHOP"
7/1/90	FIRST ADVISORY COMMITTEE MEETING HELD
9/17/91	FIRST WORKSHOP "WAR ON WASTE"DESIGNATION, LAND DISPOSAL, TRANSPORTATION
11/1/90	ADVISORY COMMITTEE APPROVED HMMT CURRICULUM OUTLINE
11/28/90	COLUMBIA BASIN COLLEGE CURRICULUM COMMITTEE APPROVED HMMT CURRICULUM
12/17,18/90	"WAR ON WASTE" TOXIC SUBSTANCE AND CONTROL ACT
12/31/90	DEE LLOYD TERMINATED
1/22-22 & 1/23-24/91	HAZARDOUS AWARENESS WORKSHOP 2 SECTIONS SCHEDULED; CANCELED LOW ENROLLMENT
2/4/91	COLUMBIA BASIN COLLEGE BOARD OF TRUSTEES APPROVED HMMT CURRICULUM
2/18/91	DR. KENNETH FERRIGNO, NEW PROGRAM COORDINATOR BEGAN EMPLOYMENT AT COLUMBIA BASIN COLLEGE
2/20,21,22, 1991	CERTIFIED HAZMAT MANAGER REVIEW COURSE
2/23/1991	CERTIFIED HAZMAT MANAGER CERTIFICATION EXAM
3/25/91	FIRST HMMT DEGREE CLASSES BEGAN

4/3/91- 11/15/01	INTERACTIVE VIDEO CONFERENCE " HAZARDOUS/RADIOACTIVE WASTE MANAGEMENT"
5/15/91	WASHINGTON STATE BOARD FOR COMMUNITY COLLEGES APPROVED HMMT PROGRAM
7/22-8/11/91	80 HOUR OSHA WORKSHOP
8/2-3/91	DONNA CAMPBELL PRESENTED CURRICULUM WORK ON HMMT PROGRAM AT " PETE" CONFERENCE IN SAN FRANCISCO
9/8-11/91	"ER 91" INTERNATIONAL CONFERENCE, PASCO WASHINGTON DR. FERRIGNO, PROGRAM COORDINATOR, PRESENTED A PAPER; "HMMT CURRICULUM DEVELOPMENT AT COLUMBIA BASIN COLLEGE", DONNA CAMPBELL, PROJECT DIRECTOR, CHAIRED ONE TECHNICAL SESSION, COLLEGE SPONSORED AN EXHIBIT
11/30/91	GRANT ACTIVITY COMPLETED; HMMT PROGRAM ONGOING, 100+ STUDENTS CURRENTLY ENROLLED

DISSEMINATION EFFORTS

Even though the grant did not require any dissemination of the materials, because Columbia Basin College was funded at a lower level that the original proposal, the college felt an obligation to share information. Inquiries have been addressed on an individual basis. In addition, curriculum materials have been presented at three national/international meetings.

1. DOE sponsored workshop in Denver June 1990
2. PETE conference in San Francisco August 2, 3, 1991
3. ER 91 conference Pasco, Washington September 9-11, 1991.

Programs from these conferences may be found in Appendix G.

SUMMARY AND CONCLUSIONS

Columbia Basin College was awarded $83,073.00 in grant monies from the Department of Education, March 1, 1990. Grant funds were used to develop and begin offering a Hazardous Materials Management Technician Associate Degree Program. There are now more than 100 students enrolled in the program. Curriculum development was supported by an advisory committee of experts in the field of Waste Management Environmental Restoration from local industry.

A variety of workshops and short courses have also been offered. Substantially all of the objectives of the grant have been accomplished. The college plans to continue and expand the offerings in this important occupational field. The curriculum

APPENDIX A

ADVISORY COMMITTEE MEMBERSHIP/MEETING MINUTES

REV 7/27/90

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ADVISORY COMMITTE INVENTORY 1990-91

L/M	Chair	Name	H.Town		Occupation	Employer	B.Address			Phone
**	HAZARDOUS MATERIAL									
M		Irene Hayes	Richland, WA	99352	Manager-Science Ed Cntr	Battelle Northwest	P. O. Box 999	Richland, WA	99352	375-2584
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M		Don Mazur	Richland, WA	99352	Director	W.P.P.S.S.	3000 Geo. WA Way	Richland, WA	99352	372-5504
M		Mack Funk	Pasco, WA	99302	Director, Ind. Develop.	Port of Pasco	P. O. Box 769	Pasco, WA	99301	547-3378
L		Dan Glenn	Richland, WA	99352	Technician	CH2M Hill Inc.	1933 Jadwin	Richland, WA	99352	943-3114
L		Craig Timmerman	Richland, WA	99352	Manager	GeoSafe Corporation	200 Logston	Richland, WA	99352	375-3268
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L		Larry Walker	Pasco, WA	99301	Engineer	Corp of Engineers	Route 6, Box 693	Pasco, WA	99301	547-7781
L		Dennis Ross	Pasco, WA	99301	Environ. Control Director	Boise Cascade Corporation	P. O. Box 500	Wallula, WA	99363	545-3318
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M	X	Tom Gates	Richland, WA	99352	City Council Person	City of Richland	505 Swift	Richland, WA	99352	943-9161

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ENVIRONMENTAL WASTE MANAGEMENT

ADVISORY COMMITTEE MEETING

July 10, 1990

The Environmental Waste Management Advisory Committee Meeting was held on Tuesday, July 10, 1990, at 1:00 p.m. in the HUB Senate Room on the campus of Columbia Basin College. Dee Lloyd, Program Coordinator, called the meeting to order at 1:12 p.m. Those in attendance introduced themselves.

THOSE IN ATTENDANCE:

Larry Kamberg, Benton-Franklin Health Department, Richland, WA
Maureen Hamilton, Hanford Environmental Health Fnd., Richland, WA
Mike Leannah, Waste Management of Kennewick, Kennewick, WA
Eileen DeArmon, ECOS Corp., Lind, WA
Mike Poulsen, ECOS Corp., Lind, WA
Gwen Leth, Westinghouse Hanford, Richland, WA
Ron Lerch, Westinghouse Hanford, Richland, WA
Irene Hays, Battelle NW Laboratories, Richland, WA
Tim Hovdahl, Northwest EnviroService, Richland, WA
Dave Watkins, Seneca Foods, Prosser, WA
Mike Quezada, Seneca Foods, Prosser, WA
Greg Hayward, Kaiser Engineers, Richland, WA
Brian Dixon, Kaiser Engineers, Richland, WA
Joanne Shadel, Department of Energy, Richland, WA
Mack Funk, Port of Pasco, Pasco, WA
Dee Lloyd, Columbia Basin College, Pasco, WA
Donna Campbell, Columbia Basin College, Pasco, WA
Nancy Maxwell, Columbia Basin College, Pasco, WA

BACKGROUND: Dee gave a brief history of his experience and education in the Waste Management field. Dee is a native to the Tri-Cities area and graduated from CBC and from EWU (with a degree in Geology). Dee has vast experience in the field and is very enthused about his new assignment at CBC.

GRANT: Donna Campbell gave a background on how CBC applied for and received the grant for the Waste Management Program. The grant was applied for to meet the increasing needs of the local area for hazardous waste and waste management training. CBC envisions a full two-year degree program although it was only funded for short courses/seminars/workshops. WSU has recently submitted another grant proposal through the Department of Energy which is proposed to be for curriculum development for baccalaureate and graduate levels. The curriculum would be for cooperative education through Mt. Hood Community College, Columbia Basin College, University of Washington, University of Idaho, and Oregon State University.

Columbia Basin College

ADVISORY COMMITTEE INFORMATION: Nancy Maxwell distributed information on advisory committees in Washington State. She explained the function of the advisory committee once a program is in place. Advisory committees are formed to make recommendations and keep the curriculum current to industry standards. Terms of service vary from one to three years. Most advisory committees meet 2-3 times per year.

MARKET SURVEY DISCUSSION: Dee asked those in attendance on input as to: 1) what types of jobs are available? 2) what is the pay scale? 3) what is the level of training needed? 4) What do these jobs entail? Dee noted this area of employment is new and not much information is available. Tim Hovdahl will check into getting a copy of the survey the Environmental Protection Agency has developed and send this to Dee. Perhaps the information in this survey can be used to develop a survey from CBC to determine local area needs.

CURRICULUM DEVELOPMENT: Dee asked those in attendance for ideas on the training needs for their future employees. Dee would like to develop a one-year certificate program and a two-year degree program. The one-year certificate program would be for those who are currently working in the industry who would like to change jobs. This could also lead to national certification since the requirements for the certificate would be based on the national certification requirements. Dee also proposed the following four courses to be the core curriculum requirements: 1) Regulations and Compliance; 2) Hazardous Materials Management; 3) Waste Minimization/Recycling; and 4) Health Effects (Toxics) and Risk Assessment. The general education requirements would include: math, chemistry and biology (Math 101, Chemistry 101, Chemistry 111, and Chemistry 112 were later designated as the minimal levels for math and chemistry requirements). Specialty track courses were also discussed. These would include: Sample and Analysis; Computer Models - Data Management; GeoSciences SI/FS, Drilling, Groundwater Monitoring, Vadose Zone, UST; AgChemical; Industrial Processes, Management and Policy; Treatment and Cleanup Technology; and Emergency Responses. The committee discussed all of the proposed classes at length. Since opinions varied, the group recommended a survey be conducted through the local industry to determine the exact needs of the program. Dee will compile this survey and distribute it through the local industry. The committee discussed the 40-hour training program through OSHA and felt this information should be incorporated into the program. However, in 1991 the requirement will be 80 hours of training. The group also discussed short course needs of their companies. Ideas for these seminars/workshops include: Waste Regulations; Right To Know (Overviews); Underground Storage Tanks;

CURRICULUM DEVELOPMENT (CONT.): Groundwater Monitoring. Dee asked if names of people who can teach the specialty classes be forwarded to him. The survey will include a place for information on who is available to teach and what their expertise is. After all information is compiled from the survey, Dee will call another meeting together.

MEETING ADJOURNED AT 3:23 P.M.

ENVIRONMENTAL WASTE MANAGEMENT

ADVISORY COMMITTEE MEETING

August 14, 1990

The Environmental Waste Management Advisory Committee Meeting was held on Monday, August 14, 1990, at 9:00 a.m. in the HUB Senate Room on the campus of Columbia Basin College. Dee Lloyd, Program Coordinator, called the meeting to order at 9:12 a.m. Those in attendance introduced themselves. The minutes from the meeting held on July 10, 1990, were accepted.

THOSE IN ATTENDANCE:

Andrew Dixon, Benton-Franklin Govt. Conf., Richland, WA
Ken Spencer, Columbia Basin College, Pasco, WA
Maureen Hamilton, HEHF, Richland, WA
William Kinsel, WSU-Tri-Cities, Richland, WA
Cherri DeFigh-Price, Westinghouse Hanford, Richland, WA
Larry Kamberg, Benton-Franklin Health Dist., Kennewick, WA
Clair Pratt, WDOE, Pasco, WA
Mike Leannah, Waste Management of Kennewick, Kennewick, WA
Linda Garner, Kennewick General Hospital, Kennewick, WA
Brian Dixon, Kaiser Engineers, Richland, WA
Ted Ricci, Richland Fire Department, Richland, WA
Thomas Gates, City of Richland, Richland, WA
Joanne Shadel, DOE, Richland, WA
Donna Parkes, Chem-Northern, Pasco, WA
Joanne Keller, Battelle NW, Richland, WA
Tim Hovdahl, Northwest EnviroService, Kennewick, WA
Dan Glenn, Ch_2M Hill, Richland, WA
Donna Huot, Boise Cascade, Wallula, WA
Greg Hayward, Kaiser Engineers, Richland, WA
Michael Harbushka, Recontek, San Diego, CA
James Wade, City of Richland, Richland, WA
Dee Lloyd, Columbia Basin College, Pasco, WA
Donna Campbell, Columbia Basin College, Pasco, WA

REPORT ON COMMITTEE RECOMMENDATION TO PREPARE DRAFT MARKET SURVEY:
Dee Lloyd asked those present if they had recommendations on the survey's content. Donna Campbell noted the information received at the last meeting was included within the content of this survey. Each item on the survey was reviewed and recommendations were noted. Dee will make these changes and revise the survey to reflect these. Cherri DeFigh Price indicated that the committee needs to prepare a definition for an Environmental Waste Management Technician. -- Those in attendance also received a copy of another survey which will be forwarded to the Deans of Instruction at all

Columbia Basin College

SURVEYS - CONTINUED: community colleges in Washington and also those close to the Washington border (i.e. Blue Mountain CC, Lewis and Clark, North Idaho, etc.). This survey is to establish the need for a Waste Management curriculum and to find out what programs are being offered in their institutions. This information will also be used in a report due to the legislature in December.

UPDATE ON CURRICULUM DEVELOPMENT: Dee reviewed the idea to have four core courses in the Environmental Waste Management Program: 1) Understanding and Complying with State and Federal Regulations; 2) Chemistry of Hazardous Materials; 3) Health Effects of Hazardous Materials (Industrial Hygiene and Toxicology); and 4) Industrial Processes, Waste Minimization and Treatment. The "specialty" areas will be determined from information received from the survey. Dee noted a one-hour class each week will be scheduled for a guest lecturer to talk about current issues. Brian Dixon asked if consideration was given to this program leading to national certification. Dee noted this is being considered and that he will be taking national certification tests this fall and will get first hand knowledge of what type of training/education is needed for these tests. Dee noted the importance of keeping the core courses in Waste Management programs consistent to allow transferability.

REPORT ON UPCOMING WORKSHOP: On Monday, September 17th, a workshop on "War on Waste" will be held at the Red Lion and sponsored by Columbia Basin College. The brochures are currently being printed and all in attendance received a rough draft copy for their information. Dee asked for input from the group for upcoming workshops/seminars. All agreed that seminars on regulations and compliance are needed, but more hands-on experience is need, especially for "the troops in the field". Topics should also be of interest to the community.

REVIEW OF NAMES OF EXPERTS WHO CAN TEACH SPECIALTY CLASSES: Dee once again requested the assistance of this committee. He would like information on employees in the various companies who can teach a specialty class in the Waste Management/ Hazardous Materials field. The topics for specialty classes will be determined from information obtained from the surveys.

ELECTION OF OFFICERS/SUB-COMMITTEES: Dee had provided in the last mailing to the committee the description of role of the advisory committee chair. Since there were no volunteers for this position, a pro-tem nominating committee was formed. Members of this committee are: Greg Hayward (chair), Tim Hovdahl and Bill Kinsel. There will be a chair and vice-chair. -- At this time, the issue for other sub-committees will be tabled until the officers have been elected.

ASSESS EQUIPMENT, FACILITY, AND OTHER REQUIRED FUNDING FOR TWO-YEAR AAS DEGREE: Information on needed equipment, facilities and funding will be drawn from a couple of established programs and from the surveys sent out to the other community colleges.

INTRODUCE THE "DEVELOP A CURRICULUM" (DACUM) TRAINING PROGRAM: DACUM (Develop a Curriculum) is a process used to determine curriculum needs within a program. Experts are brought together (from the technician's level) for a couple of days. A facilitator is present and discussions are held to determine what types of skills and knowledge are essential for their job positions. It is then determined how this information can be developed into curricula. The first step in this process is to hire a facilitator to obtain this information. This is usually done off campus. Donna noted Vocational funding (if available) could be used in this process.

NEXT MEETING: All in attendance agreed the next meeting should be held after the information from the surveys has been received and compiled. Information from the surveys are to be returned by September 10th. The committee decided Thursday, September 27th at 2:00 p.m. would be the time and date of the next meeting. The location will be determined and announced when the meeting reminder is sent.

MEETING ADJOURNED AT 10:47 A.M.

ENVIRONMENTAL WASTE MANAGEMENT

ADVISORY COMMITTEE MEETING

September 27, 1990

The Environmental Waste Management Advisory Committee Meeting was held on Thursday, September 27, 1990, at 2:07 p.m. in room S-136 in the Math/Science Building on the campus of Columbia Basin College. Dee Lloyd, Program Coordinator, called the meeting to order at 2:07 p.m. The minutes from the meeting held on August 14, 1990, were accepted.

THOSE IN ATTENDANCE:

Greg Hayward, Kaiser Engineers, Richland, WA
Bill Kinsel, WSU-Tri-Cities, Richland, WA
Clar Pratt, WDOE, Pasco, WA
Tom Reynolds, Laborer Local 348, Pasco, WA
Marilyn Cramer, Wilbur-Ellis, Yakima, WA
Donna Parkes, Chen-Northern, Pasco, WA
Diane Mooney, Department of Trade
Mike Poulson, ECOS, Lind, WA
Linda Garner, Kennewick General Hospital, Kennewick, WA
Dee Lloyd, Columbia Basin College, Pasco, WA
Donna Campbell, Columbia Basin College, Pasco, WA
Deanna Baalman, Columbia Basin College, Pasco, WA
Ken Cowdrey, Wilbur-Ellis, Pasco, WA

REPORT FROM PRO TEM NOMINATING COMMITTEE: Greg Hayward reported the Pro Tem Nominating Committee recommended that Bill Kinsel be the Chairman of the "overall" advisory committee. Dee Lloyd moved that Bill Kinsel serve as the Chairman to this advisory group and Clar Pratt seconded the motion. All in attendance unanimously agreed that Bill Kinsel should serve as Chairman. Bill noted the importance of having broad representation on the committee from all entities of industry.

VOTE ON PURSUIT OF DACUM (DEVELOP A CURRICULUM): This item was tabled until the next meeting.

REPORT ON WASTE MANAGEMENT CERTIFICATION: Dee Lloyd distributed copies of information he had gathered on local and national certification. Dee would like to see certification as a prerequisite for those who handle hazardous materials in Washington. Ken Cowdrey stated he is personally against this since there are people who have the expertise to handle waste but are not certified. Linda Garner noted the pamphlets required five years experience or a Bachelors for certification. Ken Cowdrey stated industry is looking for people who can handle waste. Dee noted accidents/incidents happen when people are not properly trained. The group discussed this issue at length. Clar Pratt suggested that the state recognize a certified individual but not require certification.

ESTABLISH COMMITTEE ON CURRICULUM DEVELOPMENT: The committee discussed the different educational "avenues" for the Waste Management curriculum. These would be: 1) a one-year certificate program; 2) a two-year Associates degree; and 3) short-term courses/seminars. Linda Garner noted she would like to see a "track" program like the Nursing Program's LEGS curriculum. The one-year certificate curriculum would be the first half of the two-year program and students would be able to exit at this point with enough skills for job entry. Gwen Leth suggested the information gathered in the various surveys could be used in determining curriculum needs. This committee decided it was necessary to develop its own Curriculum Committee for both the short-term courses/seminars and for the one-year certificate/ two year degree program. Volunteers for the Short Course Curriculum Committee were: Greg Hayward, Marilyn Cramer and Tom Reynolds. This committee will meet on Wednesday, October 3rd, at 11:00 a.m. in Dee's office (Technical Building, Room T-177). The Curriculum Committee for the one-year certificate and two-year degree program members are: Cheri DeFigh-Price, Clar Pratt, Brian Dixon, and Maureen Hamilton. This committee should meet two weeks from today and have recommendations by the end of the month. Dee noted there is currently a survey out to the other community colleges in the state to gather information on the curriculum (if any) they have in Waste Management. Bill Kinsel noted he received information at a conference in Denver in regards to other community colleges in the nation who have established Waste Management programs. He suggested this information be reviewed and perhaps used in the development of CBC's program from information already available. Mike Poulson asked Dee if he had contacted the owner of Leo's Lineup (Leo Bowman) in Richland. Mr. Bowman is associated at the state level in efforts for waste management cleanup for the "businessman in the streets". This group believes Mr. Bowman would make an excellent addition to this advisory committee and directed Dee to contact him and invite him to join this group.

WASHINGTON STATE ENVIRONMENTAL INDUSTRY DIRECTORY: Diane Mooney from the Department of Trade distributed to all present a copy of a position paper on the "Environmental Industry Trade Association". The primary objective of the trade association would be to foster the growth of the Washington State Environmental Industry. This will be accomplished by building an infrastructure to enhance the industry, to promote Washington environmental companies (both nationally and internationally), to assist with development, support and coordination of educational programs within state universities and vocational schools, and to provide interaction with other industry segments. The Washington State Department of Trade and Economic Development will act as a catalyst to form the association. Also distributed was a copy of the 1990 Washington State Environmental Industry Directory, an initial survey of environmental businesses in this state.

REPORT ON PRELIMINARY SURVEY RESULTS: Dee reported only 10% of the surveys have been returned. Greg Hayward suggested that once the survey information has been received and compiled, copies of the results be forwarded to the advisory committee members.

DEFINITION OF WASTE MANAGEMENT TECHNICIAN: All in attendance received a copy of the definitions of Waste Management technicians. Everyone was asked to review this information carefully and fax corrections/comments to Dee by no later than Friday, October 5th. The college's fax number is 547-0511.

DISCUSS NEW SHORT COURSE: Dee would like the next short course topic to be "TCSA". This topic will be given to the Curriculum Committee on Short Courses for consideration.

WAR ON WASTE SEMINAR: There were 49 attendees at the "War on Waste Seminar" on September 17th. Dee felt this was a very successful seminar and read a letter of appreciation from one of those who attended.

NEXT MEETING: The next Environmental Waste Management Advisory Committee Meeting will be held on Thursday, November 1st, at 2:00 p.m. The location will be announced.

MEETING ADJOURNED AT 3:26 P.M.

ENVIRONMENTAL WASTE MANAGEMENT
ADVISORY COMMITTEE MEETING
November 1, 1990

The Environmental Waste Management Advisory Committee Meeting was held on Thursday, November 1, 1990, in the Senate Room in the Hawk Union Building on the campus of Columbia Basin College. Tim Hovdahl, acting Chairman, called the meeting to order at 2:12 p.m.

THOSE IN ATTENDANCE:

Clar Pratt, WDOE, Yakima, WA
Bob Bidstrup, US Ecology, Richland, WA
Twila Cooper, WSU-Tri-Cities, Richland, WA
Karen Wheeless, DOE, Richland, WA
Marilyn Cramer, Wibur-Ellis, Co., Yakima, WA
Maureen Hamilton, HEHF, Richland, WA
Leo Bowman, Leo's Lineup and Tires, Richland, WA
Eileen DeArmon, ECOS, Lind, WA
Irene Hayes, Battelle, PNL, Richland, WA
Larry Kamberg, Benton/Franklin District Health, Kennewick, WA
Cherri DeFigh-Price, Westinghouse Hanford, Richland, WA
Greg Hayward, Kaiser Engineers, Richland, WA
Brian Dixon, Kaiser Engineers, Richland, WA
Tim Hovdahl, Northwest EnviroService, Kennewick, WA
Mike Poulson, ECOS, Lind, WA
Donna Campbell, Columbia Basin College, Pasco, WA
Dee Lloyd, Columbia Basin College, Pasco, WA

ANNOUNCEMENTS: Tim Hovdahl reported Bill Kinsel will not be in attendance today since he is ill with the flu. -- An updated list of the current Environmental Waste Management Advisory Committee will be mailed out along with the minutes from this meeting (copy enclosed).

INTRODUCTION: Leo Bowman is the co-owner of Leo's Lineup and Tires. A brief vitae was given on Mr. Bowman. He brings to this committee a vast amount of expertise and he has been involved in various community and state committees.

ELECTION OF CHAIRPERSON: Dee Lloyd informed those in attendance they needed to elect a Chairperson to this group. Greg Hayward nominated Tim Hovdahl and Cherri DeFigh-Price seconded this motion. All in attendance unanimously agreed that Tim Hovdahl should serve as Chairman.

DISCUSSION OF THE DEFINITION OF ENVIRONMENTAL WASTE TECHNICIAN: Dee Lloyd distributed a copy of the definition of an Environmental Waste Technician to all in attendance. After careful review and a lengthy discussion, the term "Environmental Waste Technician" was revised to "Hazardous Materials Management Technician" and the entire definition was updated (copy enclosed). This will be reviewed again at the next advisory committee meeting.

REPORT FROM SHORT COURSE SUBCOMMITTEE: Greg Hayward, Chair for the Short Course Subcommittee, noted he had asked Twila Cooper from WSU-Tri-Cities to attend today's meeting. Greg noted there are concerns about duplication of short courses. Greg routed a copy of the rough draft brochure for the upcoming workshop scheduled for December 17/18, 1990. The topic will be the Toxic Substances and Control Act (TSCA). Greg asked for input from all committee members for topics for upcoming short courses. Several committee members noted CBC could be setting the standard for these short course offerings. Greg also stated short courses will be needed to maintain the expertise of those leaving the program and for continued community awareness. Dee Lloyd noted CBC will be coordinating the two-year program with the other community colleges in the state. Leo Bowman noted there will be a trade show in Seattle in December. More information can be obtained by calling 1-800-562-9989.

REPORT FROM TWO-YEAR AND ONE-YEAR CURRICULUM SUBCOMMITTEE: Dee Lloyd updated those in attendance since Bill Kinsel was ill. The subcommittee met again just prior to today's meeting and finalized their recommendations for presentation at today's meeting. Dee displayed overheads on the finalized curriculum (copy enclosed). The committee members discussed the curriculum at length. Concern was noted for courses to be offered both day and night so those currently working in the industry would have opportunity to take classes. Greg noted there is a possibility some courses could be offered on the job site. None of the core course curriculum has been developed. Just the proposed course titles for the curriculum will be presented at the Curriculum Committee. Donna Campbell encouraged the attendance of at least one committee at the Curriculum Committee. Donna explained the curriculum is presented at the first meeting and will be voted on at the second meeting. Once it is approved, it is then presented to the Board of Trustees. Donna would also like representation of this committee at that Board of Trustees meeting. This will more than likely occur at the January meeting. After the Board of Trustees' approval, the program is then submitted to the State Board for Community College Education. After approval, individual core program courses can be developed.

FUTURE GOALS AND OBJECTIVES OF THE ENVIRONMENTAL WASTE MANAGEMENT ADVISORY COMMITTEE: Dee Lloyd would like to see a subcommittee formed who will establish annual priorities. Examples of this would include: community relations, community resources, curriculum review/update, job placement, staff development, advisory committee membership, etc. Volunteers for this committee were: Eileen DeArmon, Tim Hovdahl, Bob Bidstrup, and Larry Kamberg. Tim Hovdahl noted there is a need for a Constitution and By-Laws Committee. This would help structure this advisory committee plus establish the length of terms on this committee. Tim Hovdahl felt this committee should be set up first.

NEXT MEETING: The next Environmental Waste Management Advisory Committee Meeting will be held in January. Dee Lloyd will determine the time, date and location and will inform members as appropriate.

MEETING ADJOURNED AT 3:52 P.M.

Hazardous Materials Management Technician shall mean a supervised individual trained in the technical aspects of the handling and management of waste and hazardous materials. Typical duties include, but are not limited to: maintaining a working knowledge of applicable regulations; implementing procedures and plans; preparing documents; packaging and shipping of materials; maintaining equipment, removal and decontamination; collecting samples; performing site remediation tasks, performing inspections for the purpose of maintaining compliance with state and federal regulations; training; and acting as a first responder or coordinator of hazardous materials releases.

HAZARDOUS MATERIALS MANAGEMENT TECHNOLOGY

ADVISORY COMMITTEE MEETING

February 28, 1991

The Hazardous Materials Management Technology Advisory Committee met on Thursday, February 28, 1991, at 2:00 p.m. in the Board Room in the Administration Building on the Columbia Basin College Pasco campus.

THOSE IN ATTENDANCE:

Marilyn Cramer, Wilbur-Ellis Co., Yakima, Washington
Gary Penning, Waste Management of Kennewick, Kennewick, WA
Maureen Hamilton, H.E.H.F., Richland, WA
Thomas Gates, City of Richland, Richland, WA
Doug Donnelly, Westinghouse Hanford Company, Richland, WA
Ray Seitz, Westinghouse Hanford Company, Richland, WA
Frank Worthington, Sheet Metal Apprentice Coor., Kennewick, WA
Dennis Kreid, Pacific Northwest Laboratories, Kennewick, WA
Bob Bidstrup,
Gene Schreckhise, WSU-Tri-Cities, Richland, WA
Andrew Dixon, Benton-Franklin Governmental Conference, Richland, WA
Mike Poulson, ECOS, Lind, WA
Leo Bowman, Leo's Line-Up, Richland, WA
Ken Ferrigno, Columbia Basin College, Pasco, WA
Donna Campbell, Columbia Basin College, Pasco, WA
Deanna Baalman, Columbia Basin College, Pasco, WA

INTRODUCTIONS/UPDATE: Donna Campbell introduced the new Hazardous Materials Management Technology Coordinator, Dr. Kenneth Ferrigno. Dr. Ferrigno was a Hazardous Materials instructor at Front Range Community College in Denver, Colorado. He had been working on the final adjustments to the curriculum and preparing for the first HAZMATT course before his arrival to campus on February 18th. Donna updated all of those in attendance on the progress of the proposed HMMT curriculum. The curriculum has been approved, in content, by the CBC Board of Trustees. Ken has the final adjustments and the curriculum now needs to go to the State Board for Community College Education for approval. Donna stated two additional workshops had been offered. One, "Hazardous Materials Awareness Course", scheduled in January was canceled due to lack of enrollment. The other, "Certified Hazardous Materials Manager Review Course", filled rapidly and many were turned away. Donna stated 51 people took the CHMM examination and it will take six weeks for the results. Two courses, "Introduction to Hazardous

INTRODUCTIONS/UPDATE (CONTINUED): Materials Management" (a core program course) and "Environmental Geology" (an academic support course), will be offered Spring Quarter. The "Introduction to Hazardous Materials Management Technology" course has a capacity of 40, but this will increase by 5 to accommodate those students who were not currently attending courses this quarter and needed to wait for open registration on March 4th. There will be more workshops scheduled and additional core program courses will be offered in the near future.

ELECTION OF CHAIRMAN: Donna informed the committee Tim Hovdahl is no longer able to continue as the Chair of this committee. He is traveling a great deal more and feels he cannot devote the time needed for this position. He will remain on the board. Donna stated it is state law that a chair must head these meetings and this person cannot be a CBC employee. The Chair articulates with the HAZMATT Coordinator and Donna and creates the agenda for future meetings. At this time, Donna asked for volunteers. Doug Donnelly suggested Tom Gates would be a good candidate for this position. Tom accepted the nomination and all members in attendance unanimously approved Tom as Chair. As his first order of business, Tom asked that someone volunteer to serve as Vice-Chair. Since no one volunteered, those present were asked to contact other members of this committee in regards to the Vice-Chair position. This will be an agenda item at the next meeting.

CURRICULUM: Ken distributed copies of the HAZMATT AAS Degree Program along with the list of needed equipment for the program. Ken stated that he is coordinating the CBC curriculum with other existing HAZMATT programs. The program will provide each student with a broad, basic background. The program allows flexibility for students wanting to specialize in certain areas. Ken proceeded in informing the members present with a basic description of each core HAZMATT course. Ken welcomes input from all members. Maureen Hamilton asked if the proposed budget cuts would effect the HAZMATT program. Donna stated the Board of Trustees recognizes the need for this program within in this community and this program will move forward. The group discussed other important topics which they felt should be included in the curriculum. Ken stated specific courses could be done through "short" courses.

PROGRAM EQUIPMENT NEEDS: Ken distributed a list of the "bare" equipment needs which would accommodate 30 students. Many of these needs will be met through loans of equipment through local companies. However, Ken expressed the importance of the college owning its own equipment. Those in attendance will check with their companies to see if donations are available for these specific needs.

INSTRUCTORS: Those present discussed potential instructors for the HAZMATT program. Committee members were asked to keep in mind names of people who would be qualified to teach the specific topics. Ken stated a full-time instructor will be acquired once the program gets started. The private sector will be relied on heavily especially in areas such as Environmental Law, a lawyer would be needed who maintains this topic as their specialty area.

MEETING ADJOURNED AT 3:26 P.M.

HAZARDOUS MATERIALS MANAGEMENT ADVISORY COMMITTEE MINUTES

NOVEMBER 7, 1991 CBC HUB SENATE ROOM

ATTENDING: ATTACHED LIST

The meeting was called to order at 1:40 PM by committee chair Tom Gates. Tom asked all in attendance to introduce themselves, and state the organization he/she represents.

1. Tom asked Ken Ferrigno to provide an overview of program activities.

The first class offerings were Spring Quarter 1991. 42 students enrolled in the Intro. To Hazmatt.

30 new students enrolled in Summer Quarter classes. Classes included Intro to Hazmatt, and Environmental Laws

30 new students enrolled in Fall 1991 classes, classes included Intro to Hazmatt, Environmental Laws, Radiation Health Physics and Hazmat Chemistry.

We will add 30 more new students Winter 1992. Class offerings will include Intro to Hazmatt, Environmental Laws, Radiation Health Physics, Site Investigation I, Waste Minimization and Recycling, and OSHA I and II.

The students entering Spring Quarter 1991 are now about 40% completed. They should graduate at the end of Summer 1992, or, at the latest, the end of Fall 1992.

We have over 100 total students enrolled in the program. We have met our limit. The college has neither the budget, nor the student allotment to accommodate more students in the program. We will have to limit enrollment by not starting a new cohort Spring Quarter. We may add no new students until at least Fall 1992. We are even looking at the possibility of starting only one class section per year.

We have begun to purchase needed equipment with the $100,000 grant from DOE. We will have all the necessary equipment for an OSHA class when all ordered equipment arrives.

We are in the process of writing three grants to support the program.

1. EPA Equipment matching grant
2. State Board for Community ant Technical Colleges Workforce 2000 grant to support construction of an outdoor lab.
3. DOE ERE/WM Scholarship program. Provides tuition, a stipend, internships, and $500 per recipient to the college.

Tom asked the committee members if they had any questions about Ken's report. Gene Schreckekhise asked who was teaching the classes offered. Ken responded Adjunct Faculty were being contracted to teach classes. Most come from the project. Eileen De Armon asked about the job market. We have had a great deal of interest, but no firm job offers. Eileen suggested we form a committee to work on placement for graduates. Gene also asked if there was any chance of getting full time faculty added for the program. Donna Campbell responded the current State budget situation would preclude the college employing any new full time faculty. Mike Poulson asked if grants, or local donations could help accomplish the addition of faculty Donna responded affirmatively.

SUBCOMMITTEES

Tom explained the need to form sub committees to get the work of the committee done. Sub committees will meet regularly and report back to the entire group at quarterly meetings. CBC will send a letter to all committee members within the next week asking what committee they wish to serve on. Those not responding will be assigned a committee. The committes will meet at a time set, then select their own chair, and meeting schedule. Ken will attend all committee meetings.

WORKSHOPS

Ken referred committee members to the descriptions of possible workshops they had received with the meeting agenda. This included five potential workshops. (see attached) Ken noted there was no Asbestos Workers workshop in the 5 included. He told the committee WISH has told him there is little need for the class, it is expensive to prepare and get a program certified. It takes one person nearly 3 months to complete needed certification process. It costs $1000 annually to continue the certification. There are 5 approved programs in the state. Greg Hayward indicated we may want to simply put the idea on hold, not discount it altogether. He believes there is need for the program especially on the Site. He believes it could be a money maker for the program. A general discussion of the others on the handout was held. The education subcommittee will help Ken determine what to offer and when.
OSHA training was discusses by the committee members. Greg Hayward expressed the concept both a 24 and 40 hour course need to be offered. Possibly in combination. (a 24/40 hour course.) The committee also discussed marketing for the se classes. The suggestion was made to include TRIDEC, and Trade associations, and Chambers on the mailing list. These organizations could be asked to put the information in their newsletters etc. This would help get the word out to the interested parties.

COMMUNITY OUTREACH

Ken has attended career days at schools. We need to find ways to interact with our community and increase awareness of the program as well as ER/WM issues. An effort to begin a school wide recycling

effort was suggested. We could get school children interested, then it is likely to become more accepted in homes. Donna Campbell shared there may be a summer enviornmental science camp for 5-6th graders on the CBC campus next year. She and Gwen Leth have written a small grantr to DOE to fund the project. Local school districts are excited about the opportunity for their students.
A committee will be formed to help accopmlish this goal.

OTHER

Tom asked if the committee would like to rotate meeting sites between Richland and Pasco. There was general agreement this would be a good idea. We will meet next time at the Richland Campus.

Alternative delivery systems for educational offerings was discussed. How do we reach people in outlying areas? Video, and other distance learning methods were discussed

Tom thanked the members for their attendence and participation. He encouraged all to become involved with the sub committee work.Tom asked for any further comments. Hearing none, the meeting was adjourned at 2:45 Pm.

HMMT ADV. COMMITTEE MEETING 11-07-91

NAME	REPRESENTING
Ken Ferrigno	CBC
Tom Gates	WHC/ City of Richland
Dick Wilde	Chem - Nuclear Env.Sc.
Marilyn Cramer	Wilbur Ellis Co.
Ken Spencer	CBC
Donna Campbell	CBC
Mack Funk	Port of Pasco
Bob Bidstrup	U.S. Ecology Inc.
Dee Burrie	Chen-Northern, Inc.
Garry L. Penning	W.M. of Kennewick
Art Tackett	Benton-Franklin Reg.Council
Leo Bowman	Leos Lineup and Tires
Mike Poulson	ECOS
Eileen DeArmon	ECOS
Dennis Kreid	Battelle NW.
Gene Schreckhise	WSU - Tri-cities
Bill Kinzel	WSU - Tri-cities
Greg Hayward	Kaiser Eng.
Wayne Martin	Battelle NW
Matt Monopoli	Wash. Public Power Supply System
Deanna Baalman	CBC

APPENDIX B

NEEDS SURVEY

3. What is the typical educational level of your Environmental Waste Management Technicians? (Please indicate number of technicians in each.)

	TECHNICIANS
a. Below High School	_____
b. High School	_____
c. Trade School	_____
d. Associate Degree	_____
e. College Degree	_____

4. How many employees in your company/agency frequently work with hazardous materials/waste?

a. 1 - 5
b. 6 - 10
c. 11 - 15
d. 16 - 25
e. 25+

5. What is the minimum educational level required to be a manager or supervisor of Environmental Waste Management activities at your facility?

a. High School
b. Trade School
c. Associate Degree
d. Bachelor's Degree
e. MA or PhD Degree

6. What portion of Environmental Waste Management work is performed by employees with advanced (BS, MA, or PhD) degrees, that could be performed by adequately trained Waste Management Technicians.

a. None
b. 25%
c. 50%
d. 75%
e. Other - indicate percentage _____

7. What portion of Environmental Waste Management work is performed by craft or technical employees whose regular occupations are not environmentally related?

a. None
b. 25%
c. 75%
d. Other - indicate percentage _____

8. How many Environmental Waste Management Technician level employees do you anticipate that your company/agency will hire in the next two (2) years, if any?

   a. 1 - 5
   b. 6 - 10
   c. 11 - 15
   d. 16 - 20
   e. 20+ (indicate approximate number) _____
   f. None - go to question #10

9. Which of the following is the highest level of Environmental Waste Management Technician that your company/agency would be likely to hire in the future?

   a. An Environmental Waste Management Tech with an A.A. Degree, with State or National Certification
   b. An Environmental Waste Management Tech with an A.A. Degree, without Certification
   c. An Environmental Waste Management Tech with Certification*
   d. An Environmental Waste Management Tech who graduated from a one year "Certificate Program"
   e. An Environmental Waste Management Tech who has no formal training, but has HazMat on-the-job-training

   *(National or State Exam Required)

10. As a continuation of Question #9, what entry-level salary would your company/agency expect to pay for that level of technician?

    a. up to $15,000/year
    b. $15-$20,000/year
    c. $20-$25,000/year
    d. $25-$30,000/year
    e. $30-$35,000/year

11. Would the ability to transfer Environmental Waste Management course work from a two-year program to a four-year degree program be valuable to your company/agency?

    a. not valuable
    b.
    c. valuable
    d.
    e. very valuable

September 11, 1990

Dear Survey Participant:

Due to a response to an increased demand for qualified and trained waste management personnel, Columbia Basin College proposes to offer an educational program in environmental waste management technology. Attached is a survey that will help Columbia Basin College establish the need for a waste management program, the type of curriculum for a waste management program, and the definition of an Environmental Waste Management Technician.

For the purpose of this survey, I would like to propose the following definition for Environmental Waste Management Manager and Environmental Waste Management Technician. Environmental Waste Management Manager shall mean: a supervisory or management-level individual with a staff of technicians, or an individual with sole responsibility for environmental control programs and compliance within a business; also those employees of a governmental agency with regulatory authority over some aspect of waste management operations; also those who consult or advise on waste management regulations, technology, or health and safety matters. An Environmental Waste Management Technician shall mean: an individual under the supervision of an environmental waste management manager whose employment involves handling and management of waste and hazardous materials as well as the application of waste management policies and regulations. Some examples of such duties include: materials packaging and shipping; document preparation; equipment maintenance, removal, or decontamination; sample collection; monitoring of control or treatment equipment; site remediation tasks; performing inspections for the purpose of maintaining compliance with state and federal regulations; and acting as a first responder to hazardous materials releases. If you feel that these definitions are inadequate, include your comments with the survey.

To ensure that the proposed educational program in Environmental Waste Management is on the right track, I am requesting that your company/agency include any job descriptions related to waste management technician level positions in your company/agency with the returned survey. In the survey I have listed many potential course offerings that could be included in the program for environmental waste management. I would entertain any comments about other courses that may have been overlooked in the survey. Please include these comments in the returned survey.

If you have any questions or concerns about this survey, please feel free to contact me at Columbia Basin College. My phone number is 547-0511, extension 388. I look forward to hearing from you. Please ensure that the survey is returned as soon as possible--I would like to have them by Wednesday, September 26, if possible.

Sincerely yours,

D. W. Lloyd
Program Coordinator
Waste Management

DWL:ps
enc

Columbia Basin College
Mathematics and Science Division
2600 North 20th Avenue
Pasco, Washington 99301

REV 9/5/90

COLUMBIA BASIN COLLEGE

ENVIRONMENTAL WASTE MANAGEMENT TECHNOLOGY

SURVEY

DRAFT

Name of Business/Firm/Agency _____

Mailing Address _____

City _____ State _____ Zip _____

Telephone _____ Contact Person (optional) _____

Standard Industrial Code (if known) SIC No. _____

DIRECTIONS: Please circle the letter that best corresponds to your answer.

1. Which of the following categories best describes the nature of your company/agency?

   a. Agricultural/Agri-Chemical
   b. General Manufacturing, Production and Processing
   c. Federal, State, or Local Government
   d. Treatment, Storage and Disposal Facility
   e. Health Care Facility/Testing Laboratory
   f. Military
   g. Consultant
   h. Utility
   i. Other (please describe) _____

2. What is the total number of employees at your facility?

EMPLOYEES	EMPLOYEES INVOLVED IN ENVIRONMENTAL ACTIVITIES
a. 1 - 10	a. 1 - 3
b. 11 - 50	b. 4 - 10
c. 51 - 100	c. 11 - 15
d. 101 - 500	d. 16 - 20
e. 500+	e. 20+

12. How important is the local need for specialized courses dealing with waste management and hazardous materials technology?

a. not important
b.
c. important
d.
e. very important

13. What type of outside training/education does your company/agency provide for personnel involved with the use or management of hazardous materials/waste? (Please indicate the number of personnel enrolled annually for each.)

a. OSHA 29CFR 1910 24/40 Hour Training _____
b. Professional assn. workshops/seminars _____
c. Community college courses _____
d. 4-year college courses _____
e. University extension courses _____
f. Other - indicate _____

14. What type of in-house training does your company/agency provide for personnel involved with the use of management of hazardous materials/waste? (Please indicate the number of personnel attending annually for each.)

a. Documented on-the-job training _____
b. OSHA 29CFR 1910 24/40 Hour Training _____
c. Formal classroom training _____
d. Contracted workshop/short course _____
e. Other - indicate _____

15. If available, what type of training/education would your company/agency prefer for personnel involved with the us or management of hazardous materials/waste. (Circle the letter for all that apply.)

a. Outside short course/seminar
b. In-house contracted short course/seminar
c. Block/modular training
d. Two-year technical degree program
e. One-year certification
f. Entry skill training
g. License preparation course for state/federal certification
h. Skill upgrading
i. Internship/workstudy
j. OSHA 29 CFR 1910 8/24/40 Hour Training
k. Other - indicate _____

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16. Would your company/agency send current employees to a local community college for training in an Environmental Waste Management Technology Program?

    a. Yes
    b. No

17. Is your company/agency willing to release employees from the job to attend other continuing education courses such as workshops and short courses?

    a. Yes
    b. No

18. For your convenience, indicate what schedule best suits your company's/agency's needs for this training?

	AA DEGREE	1 YR. CERT. TRAINING	SHORT COURSE WORK-SHOPS
a. Intensive block (1 week or less)	_____	_____	_____
b. 3 hours a week (4 - 18 weeks)	_____	_____	_____
c. Day class (7 a.m. - 4 p.m.)	_____	_____	_____
d. Evening class (5 - 10 p.m.)	_____	_____	_____
e. Weekend seminars	_____	_____	_____

19. Does your company/agency have or plan to have, in the near future, an Environmental Training Staff?

    a. Yes - please answer question #20
    b. No - please go on to question #21

20. Trainers and Training Managers responsible for delivering mandatory training under RCRA, SARA, TSCA, OSHA and DOT need to learn and improve their course planning or presentation skills. Would your company send Environmental Training Staff to a five-day Environmental Train the Trainer Workshop?

    a. Yes
    b. No

The following is a non-prioritized list of suggested hazardous materials technology classes. These classes may vary in both length of offering and number of credits. Please indicate the importance of each to a Community College's Hazardous Materials Technology Program: A - Not Important, B - Important, C - Very Important.

		A	B	C
21.	**Introduction to Environmental Science** (Environmental impact of hazardous materials on the ecosystem: Topics include air, water and noise pollution, pesticide usage and toxic waste.)	___	___	___
22.	**Chemistry of Hazardous Materials** (What are they, why are they dangerous, how to avoid problems, and how to classify and characterize wastes.)	___	___	___
23.	**Health Effects of Hazardous Materials (Principals of Industrial Hygiene and Toxicology)** (How hazardous materials affect human health, routes of entry, target organs and symptons. Includes the proper use and selection of personal protective equipment.)	___	___	___
24.	**Introduction to Environmental Geology** (Principles of geology, soil and groundwater contamination and monitoring, oil spills and toxic minerals.)	___	___	___
25.	**Introduction to Air Pollution** (The Clean Air Act and Air Toxics, Understanding of Federal and State Regulations.)	___	___	___
26.	**Introduction to Industrial Processes, Waste Minimization and Treatment Technology** (Become familiar with local industrial processes, which produce and generate hazardous substances/waste and learn safe management practices to be in compliance.)	___	___	___
27.	**Understanding and Complying with State and Federal Regulations** (Presents an overview of the history and purpose of regulated environmental programs RCRA, TSCA, CERCLA, etc. - emphasis on current issues.)	___	___	___

		A	B	C
28.	**Introduction to Sampling & Analytical Procedures Techniques** (Presents the procedures and methods for sample taking and analyzing hazardous materials and nuclear wastes. Quality Assurance is covered in detail.)	___	___	___
29.	**Transportation, Storage and Disposal of Hazardous Materials** (An introduction to Federal DOT and State Transportation regulations. Overview of waste generation with emphasis on generator compliance.)	___	___	___
30.	**Introduction to Asbestos Regulations** (Overview of federal, state and local regulations and asbestos program management.)	___	___	___
31.	**Emergency Response Planning and Community "Right to Know"** (Topics include spill response, site safety plan development, Material Safety Data Sheets, and understanding response team management, etc.)	___	___	___
32.	**Environmental Property Inspection** (Covers risk assessment, remedial investigation, feasibility studies, and the legal and business side of contaminated property transfer.)	___	___	___
33.	**Health & Safety Training for Hazardous Materials Workers** (OSHA:29CFR 1910.120) (Employee "Right to Know") Would fulfill forty-hour OSHA requirement.	___	___	___
34.	**Emergency Care for Hazardous Materials Exposure** (CPR and First Aid relating to persons involved with Hazardous Materials Incidents.)	___	___	___
35.	**Introduction to Site Characterization and Remediation** (Takes student through the steps from site characterization through remediation.)	___	___	___

		A	B	C
36.	**Introduction to Treatment and Cleanup Technology** (Overview of current treatment technologies such as stabilization, biotechnology, vitrification, incineration, etc.)	___	___	___
37.	**Advanced Chemical and Nuclear Analysis Methods** (Emphasis is placed on the more advanced chemical analysis tools and basic nuclear instrumentation techniques.)	___	___	___
38.	**Legal Aspects of Hazardous Materials Management** (An overview of the legal aspects of handling and management of hazardous chemical and nuclear materials. Includes legal terminology and procedures, the legal and court systems, liability of individuals and industry, and ethical considerations.)	___	___	___

39. Do you have a person in your company with expertise and willingness to teach any of the above courses?

    Name _____

    Contact phone _____

40. Advisory committees are used to assist in the continuing development of occupational education programs. Do you have anyone in your company willing to serve on the local community college advisory committee?

    Name _____

    Contact phone _____

41. We welcome any additional information or comments you would like to include. Thank you again for your participation. Would you be interested in receiving a summary of the survey results?

    Comments:

HAZMATT SURVEY (9-5-90)

"Environmental Waste Management Technician" employees anticipated to be hired by 1992 (38 companies surveyed).

# EMPLOYEES	POSITIVE RESPONSE (27)
1 - 5	18
6 - 10	4
11 - 15	2
16 - 20	2
20+	1 (100)

Suggested Minimum Number of Anticipated Employees: **116**

Suggested Maximum Number of Anticipated Employees: **300**

(THE FOLLOWING WERE INCLUDED IN THE ABOVE TOTAL BUT WERE SENT TO NON TRI-CITIES AREA. TRI-CITIES AREA INCLUDES YAKIMA & WALLA WALLA.)

Spokane	1 - 5
WOODLAND	11 - 15
KIRKLAND	1 - 5
SEATTLE	11 - 15
ARLINGTON	1 - 5

STARTING SALARIES FOR TECHNICIANS

SALARY RANGE ($K)	# RESPONSE (27)
15 - 20	11
20 - 25	7
25 - 30	8
30 - 35	1

PROBABLE NEEDS AT "THE HANFORD WESTINGHOUSE PROJECT"

COMPANY	#EMPLOYEES(2YRS)	STARTING SALARY
Battelle NWL	6 - 10	$20 - $25 K (Linda Wyrick)
ICF Kaiser Eng.	1 - 5	$15 - $20 K (G. W. Dawson)
Kaiser Eng. Han.	16 - 20	$25 - $30 K (B. J. Dixon)

SURVEY OF HMMT COURSES NEEDED

These data are based on the results of a survey conducted in July 1990 of companies and governments which are envolved in hazardous waste and/or environmental remediation, and both local and state governments envolved the the legal aspects same. Of those surveyed, 38 responded and 35 were counted. The subjects listed are the courses offered by CBC in their HAZMATT program whose content covers the survied questions. All questions on the survey are included in the CBC HAZMATT program.

SUBJECT	% VERY IMPORTANT	IMPORTANT	NOT IMPORTANT
HMMT 112 (LAWS)	66	34	-0-
HMMT 131 (OSHA)	65	20	15
(CPR - OSHA)	38	44	18
HMMT 232 (TOX)	56	32	12
HMMT 112 (DOT REGS)	50	41	9
HMMT 211 (SITE INVEST)	49	43	8
HMMT 123 (CHEM)	43	46	11
HMMT 133 (TSD)	31	42	27
HMMT 122 (WASTE MIN)	24	55	21
HMMT 111 (INTRO - CAA)	10	59	31

COMPARISON AMONG EDUATIONAL INSTITUTIONS

CBC OFFERING	FRCC	EICC	CAL.CC	U.F
HMMT 111	R	R	R	R
HMMT 112	R	R(3)	?(in111)	R
HMMT 121,131	R	R	R	***
HMMT 122	e	R	***	***
HMMT 123	***	***	***	R
HMMT 126	R	***	***	PS
HMMT 132,211	R	***	***	(ALL 4 YR)
HMMT 133	e	R	R	IH,Bio,PS,GS
HMMT 212	***	***	***	AA,
HMMT 221	***	e	R(?)	R
HMMT 223	e	R	R	***
HMMT 231	e	***	***	***
HMMT 232	***	***	***	PS,Bio,
HAZCOM	***	R	***	***
IND HYG	***	***	***	R

(A:CRSCOMPR.HMT)

Initial Training Matrix

Employee Category [a]	Course Title and Number														Total Hours
	Hazardous Communication and Waste Orientation (1 hour)	Generator Hazards Safety Training (4 hours)	Hazardous Materials Waste Job-Specific Training [b]	Radiation Worker Training (8 hours)	Waste Site-Basic (16 hours)	Scott SKA-PAK [c] Training (2 hours)	Cardiopulmonary Resuscitation (4 hours)	Fire Extinguisher Safety (1 hour)	Waste Site Advanced (24 hours)	Waste Site Field Experience (24 hours)	Hazardous Waste Shipment Certification (24 hours)	Certification of Hazardous Material Shipments (8 hours)	Hazardous Waste Site Supervisor/Manager (8 hours)	Compliance Category [d]	
	02006B	02006G	02006H	020001	020101	020032	020123	02006F	020201	020202	020065	020059	020250		
1. All Employees	X														1
2. General Worker		X	X											1	5 + unit-specific training
3. General Supervisor/ Manager		X	X											1	5 + unit-specific training
4. General Nonradiological Shipper		X	X								X			1,2	29 + unit-specific training
5. General Hazardous Material Shipper		X	X									X		1,2	13 + unit-specific training
6a. Hazardous Waste Worker (known hazards)		X	X	X	X									1,3	28 + unit-specific training + field experience
6b. Hazardous Waste Worker (unknown hazards)		X	X	X		X	X	X	X	X				1,4	44 + unit-specific training + field experience
7. Hazardous Waste Supervisor/Manager		X	X	X		X	X	X	X	X			X	1,5	52 + unit-specific training + field experience
8. Hazardous Waste Shipper		X	X	X		X	X	X	X	X	X	X		1,2,4	76 + unit-specific training + field experience

[a] Category definitions are in Table 8-6.

H9008028.1

[b] Length varies for each facility.

[c] Scott SKA-PAK is a trademark of Figgie International, Incorporated.

[d] Compliance categories:

1 WAC 173-303, 29 CFR 1910.1200
2 49 CFR 173
3 29 CFR 1910.120 (24-hour requirement)
4 29 CFR 1910.120 (40-hour requirement)
5 29 CFR 1910.120 (40-hour plus 8-hour requirement)

HAZMATT SURVEY
QUESTIONNAIRE: CLASS SCHEDULE PREFERENCES

A person may be counted in more than one time slot. It is germane to know all the possible sessions desired.

MORNING: 10

AFTERNOON: 5

EVENING: 35

SATURDAYS ONLY: 29

FOUR-HOUR SESSIONS: 19

MID DAY: 3

APPENDIX C

CURRICULUM OUTLINE/COURSE DESCRIPTIONS

HAZARDOUS MATERIALS MANAGEMENT TECHNOLOGY (HAZMATT)

Every day in our nation and community, companies involved in industries such as chemical manufacturing, petroleum refinement, and metal processing produce, handle, and transport hazardous materials which are vital to the lifestyle many Americans enjoy.

Every year, 270 million metric tons of waste classified as hazardous are produced in the United States. That's more than a ton of waste for every man, woman, and child in the country. In an attempt to manage these wastes, congress enacted several landmark laws: the Solid Waste Disposal Act in 1965, the Resource Conservation and Recovery Act (RCRA) in 1976, and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). CERCLA became known as SUPERFUND because of the $1.6 billion for which it was initially authorized for the purpose of cleaning uncontrolled releases of hazardous substances. CERCLA was re-authorized in 1986 for about $8.5 billion. The expenditure of SUPERFUND as well as expenditures for compliance with environmental laws could generate as many as 100,000 HAZMATT jobs in the next 10 to 30 years, with some estimates 3 to 10 times higher than that.

Managing these hazardous materials and wastes means dealing responsibly with the by-products of our industrialized society. When waste and hazardous materials are not properly managed, spills and accidents occur, polluting air, waterways and land.

Industrial societies produce chemicals and generate wastes in order to produce goods and services to meet the demands of our modern standard of living. Improvement is needed in minimizing waste and managing hazardous materials using highly qualified and trained technicians. Working towards a solution to pollution takes knowledge, courage and technical expertise. Columbia Basin College's Hazardous Materials Management Technology Program prepares individuals to become a part of the 18 billion dollar a year Hazardous Waste Management Business.

Environmental regulations are increasing and becoming more complex, creating many opportunities and a large demand for trained technicians.

In addition to the two-year AAS degree, Columbia Basin College offers short courses covering selected topics in Hazardous Materials and Waste Management. Please call our staff at (509) 547-0511 if you have any training needs.

Upon completion of the two-year study in Hazardous Materials Management Technology, the student will have an Associate of Applied Science Degree. Studies include topics that will prepare the graduate to:

- Understand environmental regulations and requirements
- Help handle, store, recycle, transport, sample and dispose of hazardous materials in the most efficient and cost-effective manner
- Perform site remediation tasks
- Perform inspections for the purpose of maintaining compliance with state and federal regulations
- Select and properly use personal protective equipment
- Understand waste generation and treatment processes
- Act as a first responder or coordinator of hazardous material releases

More than 150,000 students have attended Columbia Basin College since it was established in 1955.

The city of Pasco donated an expanse of land adjacent to the Tri-Cities Airport as the site for the college.

The campus is located on 155 acres of beautifully landscaped ground in Pasco and a four-building, two-acre satellite campus in Richland. The college operates on a budget in excess of $12 million and has an enrollment of about 5,500 students each quarter. Sixty percent of the students are enrolled in academic transfer programs and forty percent are in vocational/technical programs. The instructional staff now includes more than 300 full and part-time teachers.

Columbia Basin College is an accredited, comprehensive two-year college where students may earn associate degrees in nearly 40 fields of academic study and are able to transfer credits to most four-year colleges and universities.

The college offers 28 vocational/technical education programs that prepare people for employment.

Columbia Basin College

Mathematics and Science Division
2600 North 20th Avenue
Pasco, Washington 99301

HAZMATT SCHEDULE
AAS DEGREE PROGRAM

FIRST QUARTER (18)
- HMMT 111 INTRODUCTION TO HAZARDOUS MATERIALS MANAGEMENT (4)
- HMMT 112 INTRODUCTION TO ENVIRONMENTAL LAWS (4)
- CS 100 Intro to Computers (4)
- ENG 101 English Composition (3)
- SPE 101, 110 Oral Communication (3)

SECOND QUARTER (20)
- HMMT 121 OSHA I (29 CFR 1910.120) (4)
- HMMT 122 WASTE MINIMIZATION AND RECYCLING (4)
- HMMT 123 CHEMISTRY OF HAZARDOUS MATERIALS (4)
- Eng 105 Technical Writing (3)
- Mth 101 Intermediate Algebra (5)

THIRD QUARTER (21)
- HMMT 131 OSHA II (4)
- HMMT 132 SITE INVESTIGATION Phase I (4)
- HMMT 133 TREATMENT/STORAGE/DISPOSAL OF HAZARDOUS WASTES (4)
- HMMT 212 RADIATION HEALTH PHYSICS (4)
- PSY 101 Psychology (5)

FOURTH QUARTER (19)
- HMMT 211 SITE INVESTIGATION - Phase II (5)
- HMMT 126 HAZMATT SEMINAR (1)
- GEL 101 Physical Geology (5) or BIO 100 Biology (5)
- APPROVED ELECTIVE (4)
- HMMT 134 SOIL PROPERTIES (4)

FIFTH QUARTER (16)
- HMMT 221 AIR MONITORING AND INSTRUMENTATION (3)
- HMMT 232 TOXICOLOGY (4)
- HMMT 223 EMERGENCY RESPONSE - LEVELS I, II, III (4)
- GEL 211 Environmental Geology (5) or BIO 240 Ecology (5)

SIXTH QUARTER (20)
- HMMT 231 ASBESTOS INSPECTION (3)
- APPROVED RELATED ELECTIVES (17 +-)

SEVENTH QUARTER
- HMMT 231.2 SUPERVISED HAZMATT EMPLOYMENT (1-9)

TOTAL REQUIRED CREDITS = 112

APPROVED RELATED ELECTIVES

Biology 110
Biology 111, 112, 113
Biology 221, 222
Biology 260
Chemistry 111, 112, 113
Chemistry 221, 222, 223
Chemistry 251
LPN or RN PROGRAMS
AGRICULTURE PROGRAM
NUCLEAR TECHNOLOGY PROGRAM
(Other courses by approval of the HAZMATT coordinator)

CERCLA
SARA TITLE III
Hydrogeology
Conducting RI/FS
Asbestos Worker/Supervisor
Asbestos Management Planner
Hazardous Materials Transportation
Emergency Response Level V
Incident Commander

HAZARDOUS MATERIALS MANAGEMENT TECHNOLOGY
A.A.S. DEGREE PROGRAM

Technical Core:		
HMMT 111	Introduction to Hazardous Materials Management	(4)
HMMT 112	Introduction to Environmental Laws	(4)
HMMT 121/121.1	OSHA I/Lab	(4)
HMMT 122	Waste Minimization and Recycling	(4)
HMMT 123	Chemistry of Hazardous Materials	(4)
HMMT 126	Haz. Materials Seminar	(1)
HMMT 131/131.1	OSHA II/Lab	(4)
HMMT 132	Site Investigation - Phase I	(4)
HMMT 133	Treatment,Storage & Disposal of Hazardous Waste	(4)
HMMT 211	Site Investigation - Phase II	(5)
HMMT 212	Radiation Health Physics	(4)
HMMT 221//221.1	Air Monitoring and Instrumentation Toxicology	(3)
HMMT 223	Emergency Response - Levels I, II & III	(4)
HMMT 231	Asbestos Inspection	(3)
HMMT 231.1	Supervised Employment	(1-9)
Technical Support:		
AG 210	Soils	(5)
BIO 100/100.1	Gen. Biology/Lab **or higher**	(5)
BIO 240/240.1	General Ecology/Lab	(5)
CS 100/100.1	Intro to Microcomputers/Lab	(4)
GEL 101/101.1	Physical Geology/Lab	(5)
GEL 211/211.1	Environmental Geology/Lab	(5)
General Education:		
ENG 101	English Composition	(3)
ENG 105	Technical Writing **or**	(3)
or ENG 201	Adv. English Composition	
MTH 101	Intermed. Algebra **or higher**	(5)
PSY 101	General Psychology	(5)
SPE 101	Speech Essentials **or**	(3)
or SPE 110	Communication Behavior	
Electives:		
Electives related to HMMT curriculum		(29)

Hazardous Materials Management Technician shall mean a supervised individual trained in the technical aspects of the handling and management of waste and hazardous materials. Typical duties include, but are not limited to: maintaining a working knowledge of applicable regulations; implementing procedures and plans; preparing documents; packaging and shipping of materials; maintaining equipment. removal and decontamination; collecting samples; performing site remediation tasks, performing inspections for the purpose of maintaining compliance with state and federal regulations; training; and acting as a first responder or coordinator of hazardous materials releases.

COURSE DESCRIPTIONS HAZARDOUS MATERIALS MANAGEMENT TECHNOLOGY

HMMT 111
Introduction to Hazardous Materials Management **(4)**

This course is an overview of the environmental impact of hazardous materials. Emphasis is placed on storage and treatment practices; monitoring pollutants; damaging effects on humans, ecology and environment; and government regulations concerning soil, water and air.

HMMT 112
Introduction to Environmental Laws **(4)**

This course introduces the current federal and state laws and the local ordinances that regulate the handling, storage and disposal of hazardous materials. It includes, but is not limited to, the Clean Air Act, Clean Water Act, Safe Drinking Water Act, TSCA, RCRA, CERCLA, SARA and OSHA controlling air, water and land contamination and the right to know and be informed of hazardous situations.

HMMT 121/121.1
OSHA I/Lab **(3, 1)**

This course introduces the student to health and safety principles as prescribed by 29 CFR 1910.120. It is the first part of a two-part sequence so formulated to comply with the 30-hour requirement for Level A and B of WISHA. It provides the skills necessary to conduct field operations dealing with hazardous substances and meets the initial training requirements of OSHA for workers engaged in hazardous wastes operations. Prerequisites: HMMT 111, 112, and 123 (or concurrent enrollment)

HMMT 122
Waste Minimization and Recycling **(4)**

This course is an introduction to processes used to minimize industrial hazardous wastes as well as municipal wastes, and the processes used to recycle both types of waste streams. Pertinent recycling/waste minimization laws are discussed. Prerequisites: HMMT 111; 112

HMMT 123
Chemistry of Hazardous Materials **(4)**

The primary emphasis of this course will be the fundamental concepts of chemistry needed to work safely with hazardous chemicals and know how to deal with them in emergency situations. Topics include the basic principles of chemistry, chemistry of toxic substances; handling, storage and disposal of chemicals, and pertinent legislation.

HMMT 212
Radiation Health Physics **(4)**

Introduces the student to the principles of radiation protection from a basis of atomic and nuclear structure and types of radioactivity. Emphasis is placed on the interaction of radiation with matter and the biological effects of radiation. Topics include dosimetry, radiation protection criteria, shielding calculations and radiation measurement. Prerequisite: MTH 101

HMMT 221/221.1
Air Monitoring and Instrumentation
Instrumentation Toxicology/Lab **(2, 1)**

This course is designed to introduce laboratory sample preparation, extraction and analysis techniques. It emphasizes quality control, and demonstrates the use of specialized analytical instruments used in the laboratory analysis of inorganic, organic, asbestos and metallic contaminants. Prerequisites: HMMT 111, 121/121.1, 123 (or equivalent)

HMMT 223
Emergency Response Levels I, II and III **(4)**

Trains personnel responding to hazardous materials emergencies on the requirements outlined in the appropriate OSHA regulations and NFPA Standards.

The emphasis is on hazard and risk assessment, safety, basic chemistry, personal protective equipment, spill containment and confinement, decontamination and incident record keeping and reporting.
Prerequisites: HMMT 111, 121/121.1

HMMT 231
Asbestos Inspection **(3)**

This course covers the coordination and implementation of asbestos inspection procedures. Students will be taught technical and regulatory aspects, health effects, inspection and assessment, personal protection, sampling, documentation and communications. Simulated inspection exercises will be utilized.
Prerequisite: HMMT 111

HMMT 231.2
Supervised Employment **(1-9)**

A supervised work experience in the HMMT field for a community business or industrial firm. Involves application and practice of skills and principles learned in the classroom.

APPENDIX D

COURSE OFFERINGS/ENROLLMENT

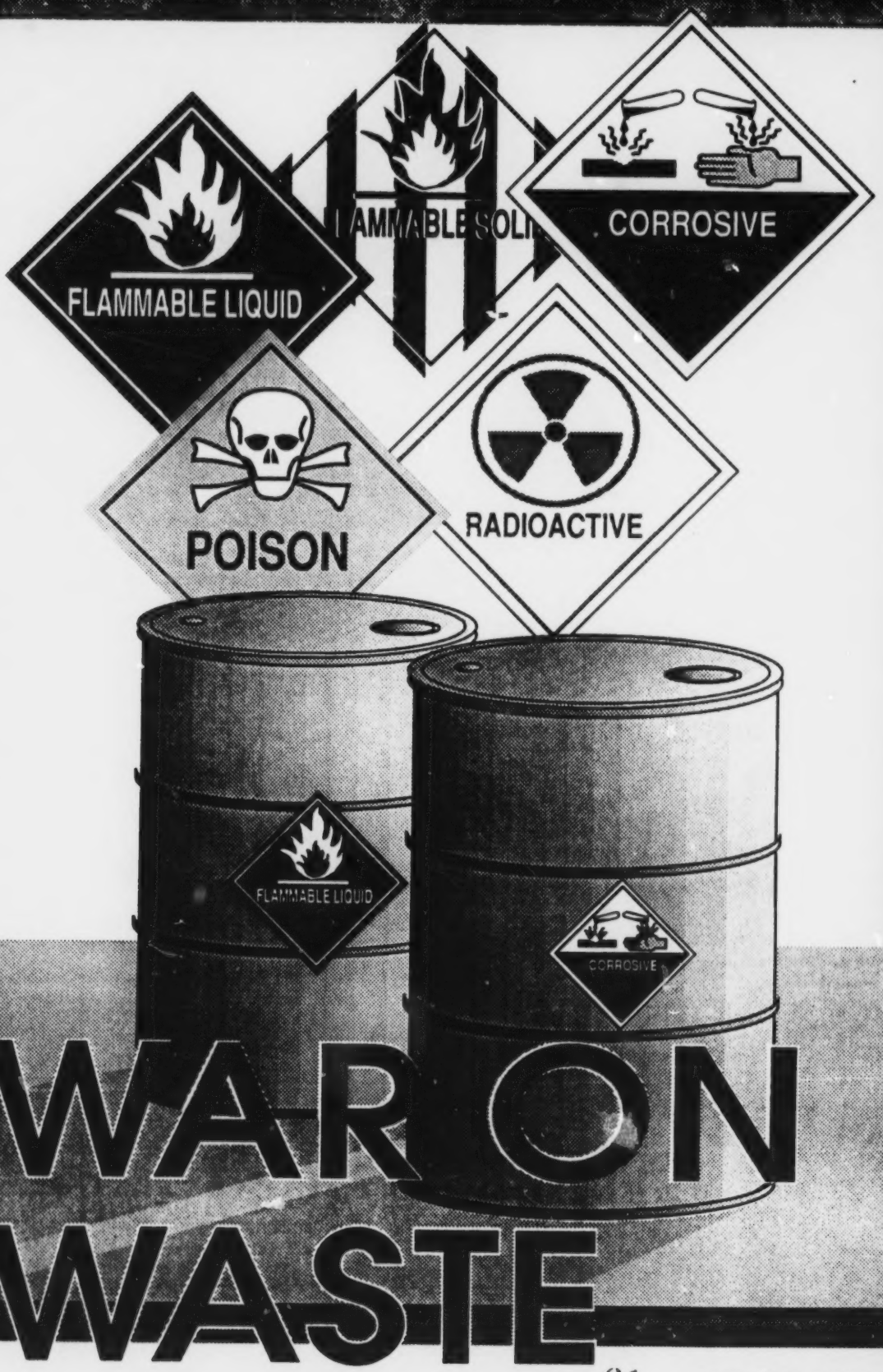
HAZARDOUS MATERIALS MANAGEMENT COURSE OFFERINGS

QUARTER	COURSE NUMBER	ENROLLMENT
SPRING 1991 MARCH 1991	HMMT 111	42
SUMMER 1991 JUNE 1991	HMMT 111	30
	HMMT 112 (AA)	30
	HMMT 112(BA)	30
FALL 1991 SEPTEMBER 1991	HMMT 111	31
	HMMT 112	29
	HMMT 123	24
	HMMT 212(AA)	22
	HMMT 212(BA)	21

APPENDIX E

WORKSHOP BROCHURES

COLUMBIA BASIN COLLEGE



WAR ON WASTE

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"WAR ON WASTE"

Monday/Tuesday
December 17/18, 1990

A workshop on the Toxic Substances and Control ACT (TSCA)

This two-day workshop is the second in the "War on Waste" series offered by Columbia Basin College to prepare and train participants to understand complex environmental regulations and to intelligently attack environmental waste management and hazardous materials issues.

COURSE DESCRIPTION:

Governmental control over hazardous waste has increased substantially as a result of poor management of waste streams, limited landfill capacity, increasing volumes of wastes and discovering new evidence of the toxic natures of substances. This intensive two-day workshop will give you an overview of TSCA and then focus on the latest developments that are important to you and your business. You will hear presentations by experts who work daily with TSCA and you will have the opportunity to gain some hands-on experience during the second day of the workshop.

WHO SHOULD ATTEND:

This course is designed for those in industry and government as well as individuals in academia who have responsibility or the need to know about the management of TSCA regulated materials. Participants will be encouraged to discuss technical problems and interact with the speakers and other participants, both in the course discussions and informally.

LOCATION:

Columbia Basin College
Technical Building, Room T-180
2600 North 20th Avenue
Pasco, Washington 99301
(509) 547-0511

Supported in part by a Department of Education Grant, #V199A00079 -$875 (17%). The remaining $4475 (83%) funded by Columbia Basin College.

Agenda

Day 1, Dec. 17

8:00 - 8:15 a.m.

Introduction - Dee W. Lloyd
Mr. Lloyd is the Program Coordinator for the Environmental Waste Management Program at Columbia Basin College.

8:15 - 9:50 a.m.

The ACT - Overview - Gary Robinson
- Activities subject to TSCA
- TSCA Chemical Inventory
- Record Keeping and Reporting
- Relationship to Other Laws

Mr. Robinson holds a degree in law and is a TSCA expert for Westinghouse Hanford Company.

9:50 - 10:00 a.m.

Review/Questions

10:00 - 10:15 a.m.

BREAK

10:15 - 11:45 a.m.

Asbestos Products and Use - Joseph Pizzarella
- Substitute Products
- Latest Bans, Regulations and Training Requirements

Mr. Pizzarella is the asbestos expert at Kaiser Engineers Hanford Company with more than 10 years experience in asbestos abatement activities.

11:45 a.m. - Noon

Review/Questions

Noon - 1:00 p.m.

LUNCH

1:00 - 2:30 p.m.

Enforcement Issues - Bill Hedgebeth
- Penalty Policy
- Internal Audits
- Preparing for an EPA Inspection

Mr. Hedgebeth is the PCB Team Leader with the EPA Region X Office.

2:30 - 2:45 p.m.

BREAK

2:45 - 3:45 p.m.

PCB Notification and Manifesting - Bill Hedgebeth

3:45 - 3:55 p.m.

Review/Questions

3:55 - 4:15 p.m.

Evaluation

Day 2, Dec. 18

8:30 - 10:30 a.m.

AHERA Requirements - Joseph Pizzarella
- Asbestos, Air and Solid Sampling
- Abatement Demonstration

10:30 - 10:45 a.m.

BREAK

10:45 - 11:45 a.m.

Laboratory Considerations - Maureen Hamilton and Dick Shea
- PCB and Asbestos Test Methods
- Swipe Test Demonstration

Ms. Hamilton is the Director of the Environmental Health Sciences Laboratory at the Hanford Environmental Health Foundation and Mr. Shea is an Analytical Chemist.

11:45 a.m. - Noon

Review/Questions

Noon - 1:00 p.m.

LUNCH

1:00 - 2:00 p.m.

Radon - Warren Riddle

Mr. Riddle is President of Cavalier Engineering. He holds a BS Degree in Soils from W[illegible], and is an EPA "Proficient Tester and Contractor".

2:00 - 2:15 p.m.

Review/Questions

2:15 - 3:15 p.m.

VIDEO: TSCA Review

3:15 - 3:30 p.m.

EVALUATION

3:30 p.m.

END

REGISTRATION:

COST: $100.00 (includes morning and afternoon breaks, all workshop materials, lunch and a Certification of Completion). A copy of The TSCA Handbook, second edition is included. Registration is limited; please register early. (It is anticipated that the class will be full early.) Use the attached registration form. Make remittance payable to Columbia Basin College. Please return completed registration forms and remittance to:

Columbia Basin College
c/o Dee Lloyd
Math/Science Division
2600 North 20th Avenue
Pasco, Washington 99301

Columbia Basin College reserves the right to cancel the course due to insufficient enrollment. In the event of cancellation, all fees will be refunded.

"WAR ON WASTE"

FOR ADDITIONAL INFORMATION CONTACT:

Dee Lloyd
Program Coordinator
Environmental Waste Management Program
Columbia Basin College
2600 North 20th Avenue
Pasco, Washington 99301
(509) 547-0511, Ext. 388

REGISTRATION FORM

NAME _____

ADDRESS _____

CITY/STATE/ZIP CODE _____

PHONE _____
WORK HOME

SOCIAL SECURITY NUMBER _____

EMPLOYER/ADDRESS _____

_____

_____

_____

Late registration, on a space available basis, will take place at 7:30 a.m., on Monday, December 17.

COLUMBIA BASIN COLLEGE
2600 North 20th Avenue, Pasco, WA 99301

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Environmental Waste Management Program

BEST COPY AVAILABLE

Toxic Substance Control Act
(40 CFR 700-799)
December 17-18, 1990
(16 hours)

ATTENDEES

Baker, Ron L.	Westinghouse Hanford P.O. Box 1970, S4-08 Richland, WA 99352
Bidstrup, Robert H.	U.S. Ecology P.O. Box 638 Richland, WA 99352
Bisibhwaney, Brij	Kaiser Engineers P.O. Box 888, TCPC Richland, WA 99352
Boderick, Connie	1917 Rd 44 Pasco, WA 99301
Bowersock, Robert V.	Westinghouse Hanford P.O. Box 1970, S5-80 Richland, WA 99352
Burnett, John W.	Kaiser Engineers P.O. Box 888, W5-200W Richland, WA 99352
Clawson, Frank	Kaiser Engineers P.O. Box 888, Bldg 1256 Richland, WA 99352
Coke, Joe E.	Rt. #2, Box 2994-B Benton City, WA 99320
Cook, Shirley A.	Westinghouse Hanford P.O. Box 1970, S4-07 Richland, WA 99352
Souther-Foreman, Judy K.	17 South Irby Kennewick, WA 99336

Fricke, Stuart	P.O. Box 477 Grandview, WA 98930
Gamin, J. E.	Westinghouse Hanford P.O. Box 1970, G6-57 Richland, WA 99352
Gilles, David A.	Westinghouse Hanford P.O. Box 1970, S4-15 Richland, WA 99352
Gilson, Dayle L.	Kaiser Engineers P.O. Box 888, W5-200W Richland, WA 99352
Goeckner, Darrell D.	Westinghouse Hanford P.O. Box 1970, S4-05 Richland, WA 99352
Green, David L.	P.O. Box 477 Grandview, WA 98930
Henager, W. H. (Bill)	P.O. Box 110 Prosser, WA 99350
Hovdahl, Tim	1776 Fowler St., Suite 24 Richland, WA 99352
Johnson, R. Henry	2202 W. Clearwater Kennewick, WA 99336
Johnson, Rick	7601 W. Clearwater #301 Kennewick, WA 99336
Junt, Kasey	4220 W. Klamath Kennewick, WA 99336

Lyon, James S.	3482 Glade N. Rd. Pasco, WA 99301
McFall, Richard J.	Kaiser Engineers P.O. Box 888, 200E, 2910E Richland, WA 99352
Meyers, Carlton D.	Westinghouse Hanford P.O. Box 1970, S0-01 Richland, WA 99352
Ochu, David A.	2134 W. 8th Place Kennewick, WA 99336
Poeppel, Kathy	1218 W. Jan Pasco, WA 99301
Reseck, William	Westinghouse Hanford P.O. Box 1970, S0-49 Richland, WA 99352
Seitz, M. R.	Westinghouse Hanford P.O. Box 1970, G6-57 Richland, WA 99352
Sutton, Scott C.	Westinghouse Hanford P.O. Box 1970, S4-06 Richland, WA 99352
Thomas, Greg B.	H.E.H.F. P.O. Box 100 Richland, WA 99352

CHMM
Registration Form
(WO55)

Name

Address

City/State/Zip Code

Phone: Work/Home

SSN

Employer/Address

❑ Check here if you plan to take the CHMM exam

The ACHMM Study Guide may be purchased through the Columbia Basin College Bookstore. CBC reserves the right to cancel the course if enrollment is insufficient. In the event of cancellation, all fees will be refunded.

Supported in part by a Department of Education Grant, #V199A000179 - $1,175.00 (15%). The remaining $6,466.00 (85%) by Columbia Basin College.

COLUMBIA BASIN COLLEGE
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(WO55)

COLUMBIA BASIN COLLEGE

Certified Hazardous Materials Manager Review Course

(WO55)

Columbia Basin Community College and the Pacific Northwest Chapter of the Academy of Hazardous Materials Management are offering a review course in Hazardous Materials Management. The course is designed to act as a review for students who plan to take the certification examination (CHMM). The course does not claim that the student will pass the CHMM examination. It is solely for the purpose of review. For further information contact Columbia Basin College (509) 547-0511, Ext. 283.

DATES:

Review Course
Wednesday, Thursday,
and Friday
February 20, 21, 22, 1991
8:00 a.m. - 4:00 p.m.

Examination
Saturday, February 23, 1991
8:00 a.m. - 12:00 noon

LOCATION:

Review Course
Red Lion Motor Inn
Silver Room
2525 North 20th Avenue
Pasco, Washington 99301

Examination
Columbia Basin College
Technical Building
Room T-180
2600 North 20th Avenue
Pasco, Washington 99301

Course Content:

Chemistry and Physical Biological Effects, Radioactive Materials Concepts, Safety and Health PPE, OSHA Training for Site Entry, NEPA, Radiation Laws, FIFRA, TSCA, RCRA, Clean Air Act, NESHAPs, Clean Water Act, Safe Drinking Water Act, RCRA, Hazardous Materials Transportation Act, CERCLA, Emergency Preparedness, Liability Issues and Management Issues.

Test Information:

The cost of the course does not cover the cost of the CHMM test.

The Institute of Hazardous Materials Management is offering the test on Saturday, February 23, 1991, from 8:00 a.m. - 12:00 noon. This test will be proctored by Professor Fred Delvecchio of Green River Community College (206) 254-1369. The test will be given at Columbia Basin College. Applicants should apply for the test directly to IHMM, Attn: Hal Gordon, 5010-A Nicholson Lane, Rockville, MD 20852 (301) 984-8969. Applications must be received no later than 6 weeks prior to the test date. Applications are available locally from Columbia Basin College.

Registration:

(does not include cost of exam) The cost is $200.00 (includes morning and afternoon breaks, all class materials, lunch and a Certificate of Completion). Registration is limited; please register early. Make remittance payable to Columbia Basin College.

Please return completed registration forms and remittance to:
Columbia Basin College
Math/Science Division
2600 North 20th Avenue
Pasco, WA 99301
(509) 547-0511 ext. 283

WAR ON WASTE
Hazardous Materials Transportation
(49 CFR 100-177)
September 17, 1990
(8 hours)

ATTENDEES

Adams, Elizabeth J.	178 Edgewood Dr. Hanford Env Health	376-6444
Anderson, Robert G.	Project Engineer Westinghouse	376-2619
Backlund, Ernest G.	Engineer Westinghouse	373-2708
Baker, Ron	Plant Engineer Westinghouse	373-1994
Birkland, John	5671 Grn Acrs Rd,Othello K & L Farms	269-4444
Bowers, James	1424 S. Buchanan Pl. Westinghouse	376-9014
Burris, David	P.O. Box 10 Richland, WA	377-1978
Coyne, Robin L.	1675 Hunt,Richland Kaiser Engineers	376-3499
Dietrich, Leonard	P.O. Box 650, Pasco Basin Disposal	547-2476
Faulk, Dennis Alan	Engineer Westinghouse	373-4448
Foreman, Judy K.	17 S. Irby Kennewick, WA	783-7145
Gilkeson, Bruce A.	Project Engineer Westinghouse	373-4073
Harding, E.M.	Engineering Tech. Westinghouse	373-1880
Hawkinson, Newton	PO Box 6148, Kennewick Chevron Chemical Co.	783-4235
Hilliard, Jim R.	Plant Engineer Westinghouse	373-1782

Hopkins, G.G.	Team Leader Westinghouse	373-5251
Iwatate, Debbie F.	Sr. Engineer Westinghouse	376-8856
Jackson, George W.	Manager, Gr.Facilities Westinghouse	373-3885
Janikowski, Dennis	Project Engineer Westinghouse	376-5486
Johnson, John L.	7810 Sagemoor Rd, Pasco Western Farm Service	545-4900
Larson, Judy M.	3720 Leola, Pasco Hanford Env Health	376-1568
Manthos, Eddie John	Engineer Westinghouse	373-2390
Mercer, Meg O.	75 Willis Hanford Env Health	376-2695
Mildon, Dan T.	Principal Engineer Westinghouse	376-9793
Minton, Barbara A.	520 Iris Lane Pasco, WA	376-3432
Morrison, James A.	Plant Engineer Westinghouse	373-5264
Mullen, John B.	2917 W. 19th Self-Employed	582-4638
Mullen, Mimi R.	2917 W. 19th Self-Employed	582-4638
Muller, Frank J.	Project Engineer Westinghouse	373-1529
Nelson, Walter	701 S. Roosevelt Westinghouse	735-6864
Noble, John J.	Mgr.,Facil.Projects Westinghouse	376-8092
Ochu, David A.	2134 W. 8th Pl. Kennewick, WA	582-3965

Olson, Doug	2350 E 50th Pl Kennewick, WA	376-9014
Renner, Ray	2262 W. Barbara Rd	488-2479
Russell, L.E.	Engineering Tech Westinghouse	373-5826
Sams, Douglas	405 Birch Ave Hanford Env Health	376-1568
Sheehan, John Stephen	Engineer, TRU Waste Westinghouse	373-3680
Schwarzwalter, Danny	425 N Col Ctr Blvd Western Farm Service	545-4900
Swallow, Reed L.	4845 Blue Heron Westinghouse	373-3893
Thomas, Berta L.	P.O. Box 999,Richland Battelle NW Labs	376-4280
Thomas, Greg B.	805 Goethals,Richland Hanford Env Health	376-1493
Tollefson, David J.	Project Engineer Westinghouse	376-5299
Tyler, W.T.	Professional Support Westinghouse	373-3841
Valero, Oscar J.	Nuclear Process Operator Westinghouse	373-4107
Vanselow, Larry D.	Project Engineer Westinghouse	373-4382
Winkler, Chris M.	Supervisor Westinghouse	373-2885
Zabel, Michael L.	805 Goethals,Richland Hanford Env Health	376-9894
Zaloudek, Diane	Engineering Tech. Westinghouse	373-1781

Hazardous/Radioactive Waste Management

A Technology Transfer Initiative — Professional Training Necessary in the 1990s

This videoconference series has been developed and is presented by the New Mexico Waste Management Education and Research Consortium (WERC), a consortium of New Mexico State University, University of New Mexico (series originating site), New Mexico Institute of Mining and Technology, Sandia National Laboratories, Los Alamos National Laboratory, and Navajo Community College (affiliate member). WERC is funded by the Department of Energy. The consortium works together to address hazardous waste issues, facilitating technology transfer, education, training, and research in hazardous waste.

This initiative recognizes the critical nature of waste management in light of the serious ecological problems confronting the country. The series will incorporate the latest technology and research showing practical application for business, industry, research and educational facilities across the country.

WERC is in a unique position to bring together the experts in many aspects of waste management from educational institutions, national research laboratories, and private industry with the aim to encourage responsibility, research, innovative solutions, and environmentally sound practices in waste management, waste remediation, and waste minimization.

OUR AUDIENCE: This training is useful to engineers, scientists, technical managers and supervisors actively working or planning to work in hazardous/radioactive waste management. Representatives from industry, education, utilities, municipalities, and government, as well as university professors, lab personnel, CEOs, operations officers, safety directors, insurance adjusters, and private consultants can all benefit.

CERTIFICATION: WERC awards an official certificate to all students completing the series. CEUs are available. WERC also offers Hazardous Waste Management Credit Courses on KU-band satellite from the three participating universities. Call for details.

PROGRAM DESCRIPTION

This series is a mix of lecture programs featuring experts from national laboratories, universities, and industry as well as private consultants. Each program will dedicate a segment to legalities and regulations concerning hazardous waste. Each program will also address scientific and technological aspects of the topic, provide technology transfer component, and contain case studies and new developments. The audience will have the opportunity to interact with the presenters during the two question/answer segments of each program.

All programs air in Wednesday. A complete description of the program times and segment breakdown of the four-hour program follows the registration form.

1 - April 3 — Toni A. Ristau, Leader
Introduction: What Is Waste?
- Background of WERC
- Overview of series
- Hazardous and toxic wastes
- Radioactive wastes
- Mixed wastes
- Legal definitions
- Applicable laws and regulations
- Emerging issues
- Technology development/transfer

2 - April 24 — John Hernandez, Leader
Risks Associated with Hazardous and Radioactive Wastes
- Assessment, perception, management
- Toxicology
- Dose-response and exposure models
- Limits of knowledge
- New developments
- Case Studies

3 - May 8 — John L. Wilson, Leader
Transport Processes Related to Wastes
- Groundwater transport, hydrology
- Species transport in groundwater
- Surface water transport and dispersion
- Colloid transport
- Air transport and dispersion
- Interphase transport
- New developments

4 - May 22 — David Kauffman, Leader
Waste Form Modification
- Applicable regulations and standards
- Incinerators - current industrial operation/new developments
- Selected examples of new research and development in chemical treatment of hazardous wastes
- Case studies

5 - June 12 — Randall T. Hicks, Leader
Site Characterization
- Applicable regulations and definitions
- Site characterization requirements
- Geophysical surveys
- Hydrology, geochemistry, and geostatistics
- Sampling wells
- Case studies

6 - June 26 — Craig Scott Leasure, Leader
Sampling and Analysis
- Applicable regulations
- Field screening methods
- Quality
- Sampling & sample management
- Laboratory analytical methods
- New developments

— Series breaks for summer —

7 - Sept. 11 — Adrian Hanson, Leader
Soil & Groundwater Remediation I: Physical/Chemical Processes
- Overview of contamination sources
- Organic contaminants: airstripping, activated carbon, soil venting
- Inorganic contaminants: heap leaching, soil washing
- New developments

8 - Sept. 25 — Ricardo Jacquez, Leader
Soil and Groundwater Remediation II: Biological Processes
- Fundamentals of bioremediation
- Decision making—Is bioremediation the appropriate option?
- Lab to the field—development process
- Engineering concepts for bioremediation
- Future developments and directions
- Case studies

9 - Oct. 9 — Douglas G. Brookins and Bruce M Thomson, Leaders
Radiation and Radioactive Materials
- Natural radiation background and indoor radon
- Nuclear fuel cycle: where wastes are generated
- NWPA, other regulations and policy
- Spent fuel and high level wastes
- Waste form and engineered barriers
- Yucca Mountain site (NNWSI)
- Oklo and other natural analogues

10 - Oct. 23 — Bruce M. Thomson and Douglas G. Brookins, Leaders
Radioactive and Mixed Wastes Management
- TRU and WIPP
- WIPP: overview and science
- Transportation of TRU
- Uranium mill tailings
- Low-level wastes
- Mixed wastes

11 - Nov. 13 — Joan B. Woodard, Leader
Waste Minimization and Series Close
- Waste minimization issues
- Case studies
- New developments
- Series summary and close-out

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"ASK THE EXPERTS"
Third Annual Hazardous Materials and Waste Management Update Teleconference

Friday, May 11, 1990

This one day teleconference is presented in six sessions. Each session will have two speakers who will present information on his/her area of expertise. Phone lines will then be opened to allow questions from participants. This is truly a unique opportunity to interact with experts in numerous areas of hazardous materials/waste management.

WHAT YOUR PARTICIPANTS CAN EXPECT. . .

* An exciting interactive teleconference.
* Their most pressing problems answered on the spot.
* Speakers who helped design and implement the various OSHA, EPA and DOT regulations.
* Excellent advice and counsel from prestigious environmental attorneys.
* Answers to what is going to happen in the future.
* Answers to land bans, disposal options, risk management, and new OSHA standards.
* Update on what is happening in the area of infectious waste, fuel burning, injection wells, and storage tanks.

TARGET AUDIENCE:

This teleconference is designed for engineers, technicians, business managers, public agencies, hospitals, small business people, planners, lawyers, policy makers, and anyone who is involved in programs related to Hazardous Materials/Waste Management, Industrial Hygiene and Safety, Hazardous Materials Incident and Hazardous Materials Emergency Preparedness.

LOCATION: Columbia Basin College, Library, Room 102

TIME:

Introduction	7:45 a.m.
Begins	8:00 a.m.
Concludes	2:00 p.m.

REGISTRATION: $60.00 (includes morning and afternoon breaks, lunch and all conference materials). Make checks or PO # payable to Columbia Basin College. Send to: Donna Campbell
Math/Science Division, CBC
2600 N. 20th
Pasco, WA 99301

Supported in part by a Department of Education Grant #V199A00079 - $750.00 (30%). The remaining $1,750.00 (70%) funded by Columbia Basin College.

TELECONFERENCE OUTLINE

SESSION ONE: Employee and Community Right-to-Know

This session will concentrate on the new OSHA Standards, Requirements and Certification

Mr. Michael Moore, Safety Engineer
Occupational Safety & Health Administration
United States Dept. of Labor
Washington, D.C.

Ms. Mary Anne Garrahen, Compliance Officer
Occupational Safety & Health Administration
United States Dept. of Labor
Washington, D.C.

SESSION TWO: Environmental Regulations

This session will update participants on changes in the past year on environmental regulations. Concentration will be on RCRA and TSCA and other pending or proposed regulations.

Mr. Derrick K. Johnson, Regional Health & Safety Officer
ICF Kaiser Engineers, Inc. and Training Officer for the
Underground Storage Tank Division
US Environmental Protection Agency
Washington, D.C.

Mr. Lynn Dail
Environmental Protection Agency
Dallas, TX

SESSION THREE: Environmental Laws and Legal Liabilities

This session concentrates on legislation covering hazardous materials/waste. The emphasis here is on potential liability problems. Be sure to ask these experts questions on minimizing your and your company's liability cost.

Mr. Michael Graves, Attorney
Hall, Estill, Hardwick, Gable, Golden and Nelson
Tulsa, OK

Ms. Pam Giblin, Attorney
McGinnis, Lockridge & Kilgore
Austin, TX

SESSION FOUR: Transportation and Disposal of Hazardous Waste

This session concentrates on making the best management decision regarding transportation and disposal. Choosing good transporters and disposal sites, choosing the best disposal alternative, etc., will be discussed. Ask these experts questions regarding the transportation and disposal of hazardous materials/waste.

Mr. Scott Logan, Compliance Officer
Chemical Resources, Inc.
Tulsa, OK

Dr. Charles Lowery
Chemical Waste Management, Inc.
Houston, TX

SESSION FIVE: Reducing Volume & Toxicity and Infectious Waste Programs

These experts will emphasize the importance of proper risk management and will work with you to ensure cost effective compliance and reducing volume. Mr. Morris will answer your questions and discuss your concerns on infectious waste management.

Dr. Michael Overcash
Professor, Dept. of Chemical Engineering
North Carolina State University
Raleigh, NC

Mr. Ronald J. Morris
Regional Director of Risk Management
Lakeshore Health System

SESSION SIX: Wrap Up and Predictions

Dr. Wayne Turner
Professor, Industrial Engineering & Management
Oklahoma State University
Stillwater, OK

In this last session Dr. Turner will discuss the status and likely future for hazardous materials/waste management. Wrap-up will involve the entire panel of experts who will be available to answer questions and perhaps speak extemporaneously on any subject they wish to address concerning Hazardous Materials/Waste.

----------"ASK-THE-EXPERTS"-TELECONFERENCE----------

ON HAZARDOUS MATERIALS AND WASTE MANAGEMENT

FRIDAY, MAY 11, 1990

NAME _____

ADDRESS _____

PHONE (WORK) _____ (HOME) _____

SOCIAL SECURITY NUMBER _____

EMPLOYER, ADDRESS & PHONE _____

_____

Late registration, on a space-available basis, will take place 7:15 a.m., Friday, May 11th.

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80 HOUR ENVIRONMENTAL HEALTH AND SAFETY TRAINING
(OSHA: 29 CFR 1910.120 and 80 Hour WISHA)

This program will provide training in all areas required by OSHA, 29 CFR 1910.120 Final Rule and the 80 hours of training as required by WISHA (WAC 296-62-3040) for the handling of toxic and hazardous materials requiring personal protective equipment through Level B and Level A.

The course content covers all areas required by WISHA including effects of chemical and biological exposure, fire and explosion hazards, general safety hazards, confined space entry, use of personal protective equipment through Level A, medical surveillance, site safety plan, hands-on use of monitoring equipment, drum handling, decontamination, WISHA's hazardous communication standard, CPR, and three (3) days of field exercises including establishing site control (work zones, buddy system, site security, communication systems, and support zones), spill containment, confined space entry, drum handling and sampling, groundwater well development and sampling, sample preparation and shipping, chain of custody protocol and other details of WISHA/OSHA regulations.

INSTRUCTORS

Thomas V. Roberson, MS, has over 13 years experience in emergency preparedness and response with the United States Air Force, and, in addition to a MS degree from Troy State University, is a graduate of the Air Force On-Scene Commander and Nuclear Emergency Team Operations courses. He managed Air Force disaster preparedness programs at three different installations worldwide, prepared nuclear, biological and chemical warfare defense plans for 57 installations across the globe, and presently directs all formal USAF disaster preparedness and safety training. He is an adjunct professor at Front Range Community College with responsibility for teaching OSHA, Environmental Law, Community HAZMATT Response Planning and Hazard Communications.

Dr. Kenneth F. Ferrigno, PhD, Coordinator of the HAZMATT program at Columbia Basin College, has degrees in Earth Science, Geology, and Hazardous Materials Technology. He has taught Hazardous Materials Management, Industrial Waste Minimization and Recycling, 40 Hour OSHA, and Asbestos Inspection.

WHO NEEDS THIS COURSE

Anyone who plans to work with hazardous materials either in an industrial setting or involved in environmental cleanup. This course is basic for anyone planning to retrain from their present jobs to hazardous waste cleanup.

80 HOUR ENVIRONMENTAL HEALTH AND SAFETY WORKSHOP

DATE: July 29 - August 2, August 5 - August 9

TIME: 8:00 a.m. - 4:30 p.m. daily

COST: $1,285.00 (includes student manual, coffee, morning pastry, and lunch)

LOCATION: Columbia Basin College
2600 North 20th
Pasco, Washington

Upon successful completion of the workshop, you will receive a certificate which will indicate that you have successfully completed the requirements prescribed in 29 CFR 1910.120 (40 Hour OSHA) and WAC 296-62-3040 (80 Hour WISHA).

Registration is on a first-come-first-served basis. The last day to pre-register is July 19, 1991. The maximum number of participants is 30.

Columbia Basin College reserves the right to cancel the workshop by July 22.

For further information regarding this workshop, contact Dr. Ken Ferrigno at Columbia Basin College, (509) 547-0511 ext. 388.

REGISTRATION FORM

DETACH AND MAIL WITH YOUR FEE

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80 Hour Environmental Health and Safety Workshop
Partially Funded by Department of Education Grant #V199A00079

NAME _____ **SS#** _____

ORGANIZATION _____ **TITLE** _____

ADDRESS _____ **WORK PHONE** _____

CITY _____ **STATE** _____ **ZIP** _____

MAIL REGISTRATION FORM TO: **Columbia Basin College**
Math/Science Division
2600 North 20th Avenue
Pasco, WA 99301

80

40 Hour Environmental Health and Safety Training (OSHA 29 CFR 1910.120)

March 2-6, 1992
8:00 a.m. - 4:30 p.m.
Columbia Basin College - Pasco Campus

This program will provide training in all areas required by OSHA, 29 CFR 1910.120 Final Rule for the handling of toxic and hazardous materials requiring personal protective equipment.

The course content covers all areas required by OSHA including effects of chemical and biological exposure, fire and explosion hazards, general safety hazards, confined space entry, use of personal protective equipment through Level A, medical surveillance, site safety plan, hands-on use of monitoring equipment, drum handling, decontamination, OSHA's hazardous communication standard, and hands-on field exercises including establishing site control (work zones, buddy system, site security, communication systems, and support zones), spill containment, confined space entry, drum handling and sampling, groundwater well sampling, sample preparation and shipping, chain of custody protocol and other details of OSHA regulations.

WHO NEEDS THIS COURSE

Anyone who plans to work with hazardous materials either in an industrial setting or involved in environmental cleanup. This course is basic for anyone planning to retrain from their present jobs to hazardous waste cleanup.

COST

The cost for this 5 day course is $575 per registrant which includes student manual, coffee, morning sweet rolls, lunch and certificate which will indicate compliance with 40 Hour requirements for Environmental Health and Safety for Hazardous Waste Site Operations.

Upon successful completion of the workshop, you will receive a certificate which will indicate that you have successfully completed the requirements prescribed in 29 CFR 1910.120 (40 Hour OSHA).

The last day to PREREGISTER is February 20, 1992. Registration is on a first-come-first-served basis. The maximum number of participants is 30.

Columbia Basin College reserves the right to cancel the workshop by February 22, 1992.

REGISTRATION FORM
DETACH AND MAIL WITH YOUR FEE

NAME _____ SS# _____

ORGANIZATION _____ TITLE _____

ADDRESS _____ WORK PHONE _____

CITY _____ STATE _____ ZIP _____

MAIL REGISTRATION FORM TO: Columbia Basin College
Math/Science Division
2600 North 20th Avenue
Pasco, WA 99301

APPENDIX F

SPECIALISTS/TECHNICAL ASSISTANCE MEMBERSHIP LIST

GRANT ITEM 4.1 AND 1.0
SPECIALISTS AND TECHNICAL ASSISTANCE TEAM

Specialist	Representing	Specialty Area
Tim Hovdahl 783-5595	Northwest Enviroservice Inc.	Emergency Response Coordination
Joseph Pizzarella 373-5314	Kaiser Engineers Hanford	Asbestos Materials Abatement, and Regulations
Dee Burris 547-1671	Chen Northern	Underground Storage Tank Issues
Mark Stevens 545-3283 (SCAN)	WA Dept. of Ecology N. 4601 Monroe, Ste. 100 Spokane, WA 99205	Underground Storage Tank Issues
Bruce Howard 545-2926 (SCAN)	WA Dept. of Ecology N. 4601 Monroe, Ste. 100 Spokane, WA 99205	Washington Dangerous Waste Regulations/ Enforcement
Craig Timmerman 375-3268	GeoSafe Corporation	Waste Vitrification and Treatment
Dr. Mingyu Ye 376-5950	NORCUS	Radioactive Waste Management
Larry Dewitt 547-0511 ext. 288	CBC	Radiation Detection Measurement and Waste Packaging
Louis Meissner 545-9329	Wilbur Ellis	Pesticides and FIFRA
Gary Robinson 376-1794	Westinghouse Hanford	Toxic Substances Control Act (TSCA)
Jerry Skolrud 376-6180	Westinghouse Hanford	SARA Title III
Dale Lindsey 373-3048	Westinghouse Hanford	Waste Minimization

Mark Hevland 373-1996	Westinghouse Hanford	Radiological Protection Health Physics
Dee W. Lloyd 545-9969	CBC	RCRA
Bob Robinson 545-4531	Teamsters Teamsters Hall N. 4th Ave. Pasco, WA 99301	Transportation, Storage and Handling of Hazardous Materials
Steve Wiegman 376-7325	Westinghouse Hanford	Regulatory Compliance
Paula Davis 376-2389	Westinghouse Hanford	National Pollution Discharge Elimination System (NPDES)
Mel Adams 376-8361	Westinghouse Hanford	(RI/FS) Site Investigations
Andrew Dixon 943-9185	Benton-Franklin Governmental Conference	Household Waste Management
Gaynor W. Dawson 946-2110	ICF Kaiser	Groundwater Monitoring Remedial Action

APPENDIX G

DISSEMINATION CONFERENCE PROGRAMS

PRELIMINARY AGENDA

"ENVIRONMENTAL RESTORATION/WASTE MANAGEMENT (ER/WM) TECHNICIAN EDUCATION"

A national workshop for educational institution representatives to meet with DOE staff and contractors to discuss the development of technician education/training programs for ER/WM employment needs.

Date and Time:

June 11, 1990, 7:30 a.m.-5:15 p.m.
Reception 6:30 p.m.

June 12, 1990, 7:30 a.m.-4:00 p.m.

Location:

Denver, Colorado

at the
Hyatt Regency Tech Center
7300 Tufts Avenue

Sponsored by the U.S. Department of Energy, Office of Environmental Restoration and Waste Management.

Coordinated by Oak Ridge Associated Universities, a U.S. DOE M&O contractor facility.

ENVIRONMENTAL RESTORATION/WASTE MANAGEMENT (ER/WM) TECHNICIAN EDUCATION WORKSHOP

PRELIMINARY AGENDA

Workshop Moderator: Dr. Alfred Wohlpart, Vice President, Science/Engineering Education Division, Oak Ridge Associated Universities and DOE ER/WM Task Force on Education

Monday, June 11, 1990

7:30 a.m. - 8:30 a.m. **REGISTRATION**

8:30 a.m. - 9:45 a.m. **OPENING SESSION**

Welcome and Introduction of Keynote Speaker by DOE/EM Representative (Mr. Texas Chee)

Keynote Address by DOE/EM Spokesperson (Ms. Susan Prestwich)

Presentation on Technician Career Opportunities Related to Waste Management
Speaker: Dr. Frank Coffman, IT Corporation

10:00 a.m.- NOON **ESTABLISHING COOPERATIVE PROGRAMS**

10:00 a.m. - 11:30 a.m. PANEL 1: Oak Ridge, Tennessee
Panel Chair: Dr. Thomas Byrne, Roane State Community College
Panel Members: Ms. Karen Atchley, DOE Oak Ridge Operations Office
Mr. Thomas Row, Oak Ridge National Laboratory
Mr. Duane Hymer, Martin Marietta Energy Systems, Inc.
Mr. Timothy Hatcher, Roane State Community College
Dr. Dan Hyder, Roane State Community College

11:30 - NOON Presentation on Savannah River Operations Manpower Needs Assessment Study and Plans for Education/Training Programs
Speaker: Dr. Michael Hodges, Westinghouse Savannah River Company

12:15 p.m.- 1:30 p.m. **LUNCHEON**

12:55 p.m. - 1:00 p.m. Introduction of Luncheon Speaker (Dr. Alfred Wohlpart)

1:00 p.m. - 1:30 p.m. Luncheon Address on Hazardous Materials Problems and Use of Technician Personnel
Speaker: Dr. Robert Craig, Central HAZWRAP, Martin Marietta Energy Systems, Inc.

1:45 p.m. - 5:15 p.m. **ESTABLISHING COOPERATIVE PROGRAMS - PANEL DISCUSSIONS (Continued)**

1:45 p.m. - 3:45 p.m. PANEL 2: Albuquerque, New Mexico
Panel Chair: Dr. William Alsop, New Mexico State University at Carlsbad
Panel Members: Mr. Darrell Bandy, DOE Albuquerque Operations Office
Dr. Nestor Ortiz, Sandia National Laboratories
Dr. Richard Lynch, Sandia National Laboratories
Dr. Joseph Ladish, Los Alamos National Laboratory
Mr. John Fox, Los Alamos National Laboratory
Dr. John Barnes, University of New Mexico at Los Alamos
Mr. Joseph Rodman, Albuquerque Vocational-Technical Institute

4:00 p.m. - 5:15 p.m. PANEL 3: Rocky Flats, Colorado
Panel Chair: Dr. Robert Krenzer, EG&G Rocky Flats, Inc.
Panel Members: Mr. Richard Schassburger, DOE Rocky Flats Field Office
Mr. David Boon (Tentative), Front Range Community College

5:30 p.m. - 6:30 p.m. **RECEPTION**

ENVIRONMENTAL RESTORATION/WASTE MANAGEMENT (ER/WM) TECHNICIAN EDUCATION WORKSHOP

PRELIMINARY AGENDA

Tuesday, June 12, 1990

7:30 a.m. - 8:15 a.m. REGISTRATION/CONTINENTAL BREAKFAST BUFFET

8:15 a.m. - 11:30 a.m. ESTABLISHING COOPERATIVE PROGRAMS - PANEL DISCUSSIONS

8:15 a.m. - 9:45 a.m. PANEL 4: Richland, Washington
Panel Chair: Ms. Irene Hays, Battelle Pacific Northwest Laboratories
Panel Members: DOE Richland Operations Office (To be designated)
Mr. Mark Hanson, Battelle Pacific Northwest Laboratories
Ms. Cherri DeFigh-Price, Westinghouse Hanford Company
Ms. Gwen Leth, Westinghouse Hanford Company
Ms. Donna Campbell, Columbia Basin Community College
Dr. Jerry Riehl, South Seattle Community College

10:00 a.m. - 11:30 a.m. PANEL 5: San Francisco Bay Area, California
Panel Chair: Ms. Debra Shanck, Fullerton College
Panel Members: Ms. Estela Romo, DOE San Francisco Operations Office
Mr. Paul R. Dickinson, Lawrence Livermore National Laboratory
Dr. Roland Otto, Lawrence Berkeley National Laboratory
Mr. Richard Fosse, Fresno City College

11:30 a.m. - NOON BREAK

NOON - 1:45 p.m. WORKING LUNCH - CONCURRENT SITE SPECIFIC SESSIONS
(Box Lunch Provided)

Oak Ridge, Tennessee/Paducah, Kentucky
Savannah River, South Carolina
New Mexico
Rocky Flats, Colorado
Richland, Washington
San Francisco Bay Area, California
Idaho Falls, Idaho
Las Vegas, Nevada/Grand Junction, Colorado
Portsmouth, Fernald, & Mound, Ohio
Argonne National Laboratory
Brookhaven National Laboratory
Amarillo, Texas

1:45 p.m. - 3:45 p.m. OPPORTUNITIES FOR UNDERREPRESENTED GROUPS IN ER/WM WORK

1:45 p.m. - 2:45 p.m. Existing and Needed Programs for Underrepresented Groups
Panel Chair: Mr. Ike Sewell, DOE Office of Minority Economic Impact
Panel Members: Mr. Gil Cordova, DOE Office of Industrial Relations
Mr. Rufus Smith, DOE Oak Ridge Operations Office
Mr. Ronald Andrade, DOE Office of Minority Economic Impact

2:45 p.m. - 3:45 p.m. Two Successful Community College/DOE Contractor Partnerships
Panel Chair: Dr. Evelyn Kish, Bronx Community College
Panel Members: Dr. Karl Swyler, Brookhaven National Laboratory
Dr. Irene Porcarello, Houston Community College
Dr. Manuel Perry, Lawrence Livermore National Laboratory

3:45 p.m. - 4:00 p.m. CLOSING SESSION

Closing Address by DOE EM Spokesperson (Mr. Texas Chee)

PETE CONFERENCE

August 2-3, 1991

Marriott Hotel, San Francisco

AGENDA: Day 1

Moderator: Rick Richardson

Morning

8:00 - 9:00	Registration Continental Breakfast
9:00 - 9:15	Welcome: ~~Richard Fosse,~~ DAVID HOGARTH Chair - PETE Steering Committee "What Can We Expect From This Conference"
9:15 - 9:30	Housekeeping: Kathleen York
9:30 - 10:00	Introductions PETE Overview and History: Paul Dickinson
10:00 - 10:30	DOE Needs: Texas Chee, Branch Chief - Environmental and Education Development Branch, U.S. Dept of Energy, Washington DC
10:30 - 10:45	Break
10:45 - 11:15	"EPA's Perspective on the Future": Timothy McProuty, Washington, DC
11:15 - 11:45	"National Environmental Haz Mat Technician Labor Market Demand & Skills Requirements Study": Paula Hudis - MPR Assoc & NCRVE
11:45 - 12:00	Questions and Answers of morning presenters
12:00 - 1:30	Lunch

Afternoon

1:30 - 3:15	Community College Response to EPA and DOE Issues - group session by tables
3:15 - 3:30	Break
3:30 - 4:30	Group Reporting
4:30 - 6:00	Reception - no host Table of Literature Curriculum Sharing

PETE CONFERENCE

August 2-3, 1991

Marriott Hotel, San Francisco

AGENDA: Day 2

Moderator: Dave Hoggard, Vice Chair - PETE Steering Committee

Morning

8:00 - 9:00	Continental Breakfast
9:00 - 10:15	Curriculum Presentations: Tom Byrne, Roane State - Tennessee Donna Campbell, Columbia Basin - Washington Ken Erickson, Eastern Idaho Technical - Idaho James Johnson, Mesa State - Colorado Howard Guyer, EHMT Program - California
10:15 - 10:45	'EPA Library, A Resource You Can Use': Linda Sunne, Regional Librarian, Region IX
10:45 - 12:15	Groups - topic selection by table (Topics will be those considered most important from the previous day's discussions)
12:15 - 1:30	Lunch - Speaker: Carmen Trutanich - Law firm of Jaffe, Trutanich, Scatena, and Blum

Afternoon

1:30 - 1:45	Break
1:45 - 2:30	Summary of Reports: Richard Fosse Discussion - Building consensus for next conference agenda
2:30 - 3:00	Evaluation End Session

BEST COPY AVAILABLE

Notes

Preliminary Conference Agenda

Sunday, September 8, 1991

3:00 p.m. - 9:00 p.m.

Registration
Location: Lobby of Red Lion Inn
3:00 p.m. to 6:00 p.m.

Reception
Location: Medallion Ball Room
6:00 - 9:00 p.m.

Monday Morning, September 9, 1991

Registration
Location: Red Lion Inn Lobby
8:00 a.m. to 3:00 p.m.

I. Plenary
Co-chairs: Willis Bixby (DOE-RL)
Pat Whitfield (DOE-HQ)

1. Leo Duffy, Director, U.S. DOE Office of Environmental Restoration and Waste Management
2. Christian Holmes, U.S. EPA Deputy Assistant Administrator for Federal Facilities
3. Richard Gurmond, U.S. EPA Director, Office of Radiation Programs
4. Dana Rasmussen, EPA Regional Administrator, Region 10
5. Christine Gregoire, Director Department of Ecology, State of Washington
6. John Wagoner, Manager, U.S. DOE Richland Operations

Luncheon: Speaker - The Honorable Sid Morrison, Representative, 4th Congressional District, U.S. Congress

Meeting Organization

General Chairmen
Willis Bixby, DOE/RL
R. Pat Whitfield, DOE/HQ

Asst. General Chairmen
Steven C. Slate, PNL - (509) 375-3903
Hank E. McGuire, WHC - (509) 376-1400

DOE Liaison
Elizabeth A. Bracken, DOE/RL - (509) 376-7277
Theodore P. Pietrok, DOE/RL - (509) 376-3079

Technical Program
Donald E. Wood, WHC - (509) 376-7832

Exhibit/Hospitality
Warren H. Bodily, KEH - (509) 376-7053

Meeting Organizer
Billie L. Neth, PNL - (509) 376-0512

Finance
Kathryn L. Bray, PNL - (509) 376-1939

Registration
Billie L. Neth, PNL - (509) 376-0512
Diane M. Hulin, DOE/RL - (509) 376-7397

International Liaison
Inga W. Leigh, PNL - (509) 376-4539

Publicity
Michael Berriochoa, WHC - (509) 376-5742

Guest Program
Lucy Love, KEH - (509) 376-5168

Technical Tours
Mary Goldie, DOE/RL - (509) 376-7505

University Liaison
James Cochran, WSU-TC - (509) 375-9258
Marv Weiss, CBC - (509) 547-0511

1991 Department of Energy Environmental Remediation Conference

The Department of Energy ER '91 Conference will be held at the Red Lion Inn (2525 N. 20th) in Pasco, Washington from September 8, 1991 to September 11, 1991.

• Registration

Advance registration is required. No on-site registration will be accepted. Attendance will be limited to 600 participants. The Registration booth will be open on Sunday, September 8, from 3:00 p.m. to 6:00 p.m. to obtain name badges and event tickets. Badges and tickets may be obtained again on Monday, September 9, from 8:00 a.m. to 3:00 p.m., and Tuesday, September 10, from 8:00 a.m. to 12:00 noon.

All conference attendees must complete the registration form provided at the back of this brochure. There is no registration fee for the conference; however, each conference attendee will be charged a ($33) non-refundable refreshment fee to cover the costs of coffee and refreshments to be served during the meeting breaks each day. If you would like to participate in optional conference activities (such as the conference luncheon and evening entertainment described on the following page), you may do so by checking the appropriate box on the registration form and enclosing payment.

Conference fees are payable in check or cash. Checks should be made payable to Battelle. An itemized receipt will be provided to you.

• Technical Program

The technical program will be held in the hotel conference rooms. ER '91 is a symposium on the requirements, technologies, and approaches for the investigation, restoration, and closure of sites contaminated with hazardous, radioactive, and mixed wastes. The general topics to be addressed include institutional, education and public involvement issues and activities; science and technology activities; and approaches and experiences from field activities and completed cleanup programs. Please consult the conference agenda in this brochure for the specific date, time, and location of each session.

EXHIBITORS NUMERICALLY BY BOOTH

Hotel Lobby	Hanford Environmental Restoration
TRK-(Pk. Lot)	Westinghouse Electric Corp.
1	Jacobs Engineering Group
2	Barringer Laboratories, Inc.
3	ENPAC Corporation
4	Thermo Analytical Inc.
5	Westinghouse Hanford Company-Environmental Engineering Group
6	DOE Field Office, Richland Quality Training & Resource Center
7 & 8	USDOE Robotics Technology Development Program-Triodyne
9	Envirocare of Utah
10	EG&G Instruments
11 & 12	Science and Engineering Assoc., Inc.
13	SAIC Corporation
14	Ludlum Measurements, Inc.
15 & 16	The Parsons Corporation
17	Allied Technology Group, Inc.
18	Core Laboratories
19	Morrison Knudsen Corporation
20	Applied Research Associates, Inc.
21	Interstate Nuclear Services
22 - 25	Chemical Waste Management Inc.
26	Columbia Basin College
27	Ecology & Environment, Inc.
28	ICF Kaiser Engineers, Inc.
29	Canberra Industries
30	Ebasco Environmental
31	MSE Inc.
32	TRW
33	International Technology Corp. (IT)
34	Stone & Webster Environmental Services
35	Westinghouse Savannah River Site Co.
36	USDOE--Idaho Field Office
37	USDOE-Uranium Mill Tailings Remedial Action (UMTRA) Project
38 & 39	USDOE Office of Environmental Restoration & Waste Management-BDM International
40	Fernald Environmental Management Project
41	USDOE Office of Technology Development-Triodyne
42	Fluor Daniel

EXHIBITOR COMPANY DESCRIPTION

Allied Technology Group, Inc.
Contact: Peggy Ferolito — *Booth: 17*

44075 Fremont Blvd.
Fremont, CA 94538
Phone Number: (415)490-3008

Allied Technology Group, Inc. provides waste management, decontamination, training, engineering and health physics support services to the nuclear industry. Brokerage services are offered by Allied Ecology Services.

Applied Research Associates, Inc.
Contact: Jimmie L. Bratton — *Booth: 20*

4300 San Mateo Blvd. NE, Suite A-220
Albuquerque, NM 87110
Phone Number: (505)883-3636

Applied Research is a broad based engineering and research firm specializing in the application of cutting edge technology to practical problems.

Barringer Laboratories, Inc.
Contact: Michael Denos — *Booth: 2*

15000 West 6th Avenue, Suite 300
Golden, CO 80401
Phone Number: (303)277-1687

Barringer Laboratories provides a wide range of radionuclide and environmental chemistry analyses. Our services include the analytical expertise and experience needed for a wide range of remediation projects. Performing mixed-waste analysis since 1983, we are the oldest commercial radiochemistry laboratory in North America.

Columbia Basin College
Contact: Ted Neth — *Booth: 26*

2600 N. 20th Ave.
Pasco, WA 99301
Phone Number: (509)547-0511 Ext. 331

The Columbia Basin College exhibit features hazardous materials and nuclear technology training programs. It gives information on academic math/science, process controls, engineering and electronic technology training programs. These are meant for educational support for the region.

Core Laboratories
Contact: Ed Wallace — *Booth: 18*

420 West First Street
Casper, WY 82601
Phone Number: 1-800-666-0306

Radiochemical testing services in a state-of-the-art facility offering services to meet changing regulatory requirements involving naturally occurring and man-made radionuclides.

Monday Afternoon, September 9, 1991

II. Earning Public Confidence and Support
Co-chairs: Bill Dixon (WHC)
Jack Baublitz (DOE-HQ)

1. Unified Theory of Sciences for Implementation of Environmental Restoration of Energy Sites - Timothy Carlson, Clay Carpenter, Jean Bench (C-N Geotech)
2. Case Studies on Designing Meetings for Effective Institutional Interactions - Rebecca Imholz, George Ruberg, D. Mark Brubak (VaTech)
3. Creating a Context for Public Confidence Environmental Remediation Programs - Patrica Serie (EIM); A. Louise Dressen (Weston)
4. Effective Outreach is Good Public Policy - William Sanderson (ORDOE)
5. How Public Issues Shape Environmental Restoration Plans. Experiences with Colorado UMTRA Projects - Bill Hunt (JEG); Jim Monaghan (Monaghan & Assoc.)
6. "Land Use Planning as a Factor in Environmental Restoration: Some Illustrations From the Hanford Case-Max Power, Jeff Brecky (WA State), Jim Rasmussen (DOE-RL), Theresa Bergman (WHC)
7. Efforts to Earn Public Support and Confidence in Hanford Cleanup Work - M.C. Brown, C. Edwards, A.A. Beers (WHC)
8. Rocky Flats Community Relations:"Coming Out of the Dark" - Frazier Lockhart (DOE-RF)

III. ER Programmatic Issues and Site Summaries
Co-chairs: Ron Izatt (DOE-RL)
Julie D'Ambrosia (ETA)

1. Programmatic Environmental Impact Statement for the Office of Environmental Restoration and Waste Management- Doug Smith (DOE-HQ)
2. DOE Policy for Acceptance of Facilities for Environmental Restoration - William Murphie, James Fiore (DOE-HQ)
3. An Overview of the Major Progress in the Environmental Restoration Program at the Savannah River Site- J.M. Pope (WSRC); L.C. Goidell (DOE-SR)
4. Achieving Technical Consistency and Meeting Technology Development Needs in the Oak Ridge Environmental Restoration Program - D. Swindell, J.S. Watson (MMES)
5. RCRA Closures at Rocky Flats Plant - A Programmatic Perspective & Case Study - M.B. Arndt, J.T. Crone, T.C. Greengard, R.T. Ogg (EG&G-R.F.)
6. Accelerated Cleanup of Part - Practice Waste Units at the Hanford Site - W.L. Johnson, F.W. Gustafson (WHC)
7. Strategic Planning of an Integrated Program for State Oversight Agreements - Ann Walzer, Terry Cothron (MMES)
8. Approach and Strategy for Setting Remedial Action Goals for Oak Ridge Operations Environmental Restoration Programs - Andy Redfearn, Amy King, Robin White (ORNL)

IV. In Situ Remediation
Co-chair: Randy Harris (HAZWRAP)

1. A Co-Metabolic Approach to Groundwater Remediation - Anthony Palumbo, P.A. Boerman, G.W. Strandberg, T.L. Donaldson, H. Jennings, S.E. Herbes (ORNL); T.J. Phelps, D.C. White (U.Tenn)
2. Ex Situ and In Situ Bioremediation of Hanford Groundwater - T.M. Brouns, D.B. Anderson, J.K. Fredericksen, S.P. Luttrell (PNL)
3. Progress in use of Electric Field Phenomena for Large Scale Cleanup of Organic-Contaminated Soils W.O. Heath, R.L. Richardson, S.C. Goheen, J.A. Roberts (PNL)
4. In Situ Grouting of Low-level Burial Trenches with a Cement-Based Grout - C.W. Francis, B.P. Spalding (ORNL)
5. A Thermodynamic Analysis of Melt Immiscibility and its Implications During Vitrification - Donald Carpenter- John Ansted (M-K)
6. Applications of In Situ Vitrification to PCB and Radioactive Contaminated Soils - Stephen Lilkala (Geosafe)

7. Application of a Six-Phase Alternating Current Power Supply for In Situ Vitrification - R.L Richardson (PNL)

8. Geosafe Experience During the ISV Operational Acceptance Tests - V.F. Fitzpatrick, C.L. Timmerman, B.E. Campbell, J.G. Carter (Geosafe)

V. POSTER - Remediation Projects and Quality Assurance
Chair: Janet L. Bryant (PNL)

1. Facilitation Techniques for Environmental Restoration Planning and Implementation - Jean M. Bench, (C-N Geotech)

2. Life Cycle Planning to Forecast Budget Requirements and Maintain Effective Cost Controls O.K. Earle, L.L. Hutterman, L. Durante (WINCO); D.G. Dunster (Golder)

3. Treatment of Oak Ridge Y-12 Plant Contaminated Soils - A.J. Dietrich, D.C. Grant, E.S. Lahoda (WEC)

4. Soil Vapor Extraction Text in a Radiologically Contaminated Site, Hanford, Washington - D.J. Moak, R. T. Coffman, S.J. Gale, M.C. Hagood, L.C. Swanson, J. Wilder (WHC)

5. Expeditious Remediation of a Leaking Underground Tank - D.E. Bernhardt, D.W. Owen (RAE); S. Prewett (GenCorp)

6. Electrokinetic Remediation of Heavy-Metal Contaminated Soils - E.R. Lindgren, M.W. Kozak (SNL); E.D. Mattson (SAT-UNSAT)

7. In Situ Vitrification of Underground Storage Tanks - J.S. Tixier (PNL)

8. Groundwater Remediation via Four Case Studies - Steven Sontag (LATA)

9. Surface Water Interim Remedial Actions for Treatment of Volatile Organic Compounds and Radionuclides at the Rocky Flats Superfund Site, Golden, Colorado - S.R. Grace (DOE-RF)

10. NEPA/CERCLA Integration at Rocky Flats - Rick Schassburger (DOE-RF)

11. Public Involvement in Remedial Work Programs at Historic Low-level Radioactive Waste Sites, Recent Canadian Experience - Brad Franklin (AECL)

12. Working with States on a Joint DOE/State Funded Cleanup Project - Loretta Fahy (DOE-AL)

13. Development of an Administrative Record and Information Repository Program to Support Environmental Cleanup at the Hanford Site in Richland, Washington - B.S. Sprouse (WHC)

14. Potential Issues Involving Actinium and Uranium Series Decay Products At Some FUSRAP and SFMP Sites - Larry Jensen (ANL)

15. Decommissioning of the 105-F and 105-H Fuel Storage Basins in the 100 Area of the Hanford Site - P.W. Griffen (WHC)

16. Determination of the Probability for Radioactive Materials on Properties in Monticello, Utah - Mary Wilson, Judy Crutcher, Douglas Halford (ORNL-GJ)

17. Accelerated Cleanup of the 316-5 Process Trenches at the Hanford Site - G.C. Henckel, W.L. Johnson (WHC)

18. Determining the Number of Samples Required for Decisions Concerning Remedial Actions at Hazardous Waste Sites - Andy Redfearn (ORNL)

19. Application of the Data Quality Process to RFI Work Plan Preparation - Bayo Canyon Firing Sites Los Alamos National Laboratory - David Flynn (IT); Sandra Wagner (LANL)

20. Program Management Strategies for Following EPA Guidance for Remedial Design/Remedial Action at DOE Sites - J.P. Hopper (WMCO)

21. Conduct of Operations in Environmental Restoration Projects - R.R. Harbert (Bechtel)

22. Chernobyl/Black Sea: Natural Remediation—Does It Occur? - William Curtis (EPA)

Tuesday Morning, September 10, 1991

VI. Hanford Tank Operations and Safety Issues
Co-chairs: Harry Harmon (WHC)
Phil Hamric (DOE-RL)

1. Hanford Waste Tank Safety Issues: A Program Plan - Harry Babad, John Deichman (WHC)

2. Integrated Research and Development - The Path to Gaining a Defensible Understanding of "Watch List" Tank Risk and Interim Stabilization Needs - Ben Johnson, G. Mellinger, D. Strachan, R. Hallen (PNL)

3. Evaluation of Tanks Containing Release Flammable Gases - J. Johnson, B. Marusich, D. Reynolds (WHC); D. Strachen (PNL)

4. Ferrocyanide Containing Tanks - Assessment of Present Estimated Risk - Bob Cash, M. Crippen (WHC);S Byron, R. Scheele, L. Burger (PNL)

5. High Organic Containing Tanks - Assessing the Hazard Potential - R. Phil Hill, Harry Babad (WHC)

6. Operating Watch List Tanks - A Study in Control - Steve Marchetti, Doug Hamrick (WHC)

7. Extended Tank Use Analysis - Cherri DeFigh-Price, Donald Green (WHC)

8. Development of Tank Instrumentation - The Search for Appropriate Monitoring - Steve Mech, B. Leggett, Cherri DeFigh-Price, C. Schroeder, B. Popielarczyk (WHC)

VII. Risk Assessment/Pathway Analysis
Co-chairs: J.S. Devgun (ANL)
Vern Rogers (RAE)

1. A Risk Computation Model for Environmental Restoration Activities - J.G. Droppo, D.L. Strenge, J.W. Buck (PNL)

2. Release Criteria and Pathway Analysis Methods for Radiologically Decontaminated Sites - G. Subbaraman, B.M. Oliver, R.J. Tuttle (RI); J.S. Dergun (ANL)

3. A Framework for Evaluating Innovative Statistical and Risk Assessment Techniques Useful in Solving Environmental Restoration Problems - N.L. Hassig, R. Gilbert (PNL)

4. Balancing CERCLA Risk and DOE Radiological Performance Assessment Methodologies and Practices -R. Shuman (RAE); D. Nix (WSRC)

5. Methodology for Conducting a Performance Assessment of an Engineered Disposal Facility - Randy Janke, Rod Gimpel (WMCO)

6. Development of the Airborne Source Term Evaluation Code, AIRSOURCE - Steven Roblyer, Christopher Lewis (WHC)

7. Baseline Risk Assessment Methodology for Mixed Waste - H. Dove, T. Marshall, F. Seiler (IT)

8. An Effective Methodology for Establishing Mercury Contaminated Soil Cleanup Standards - Sam Chatterjee (Weston)

VIII. Cleanup Project Field Experience
Co-chairs: Lew Goidell (DOE-SR);
Pat Hopper (WMCO)

1. Design and Construction of an Interceptor System for Radioactively Contaminated Solvent - Thomas Weiss Jr. (WVNS); Robert Blickwedehl (D&M)

2. Accelerated Cleanup of Carbon Tetrachloride Contamination at the Hanford Site - M.C. Hagood, W.L. Johnson, V.J. Rohay (WHC)

3. Land Surface Cleanup of Plutonium - L.L. Ebeling, Roy Evans (REECO)

4. M-Area Basin Closure Savannah River Site - S.R. McMullin, J.G. Horvath (WSRC)

5. RCRA Closure Experience with Radioactive Mixed Waste in the 183-H Solar Evaporation Basin in the Hanford Site - M.R. Morton (WHC)

6. Decommissioning of RCRA Treatment, Storage and Disposal Facility Case Study of the 216-A-29 Ditch at the Hanford Site - D.L. Smith, W.M. Hayward (WHC)

7. A Successful Environmental Remediation Program Closure and Post-Closure Activities (CAPCA) Y-12 Plant, Oak Ridge, Tennessee - Marvin Bowers (Lockwood - Greene)

8. Physical Volume Reduction of Radioactive Soils - Michael Eagle (EPA)

IX. D & D Project Activities
Co-chairs: Mike Hughes (WHC)
James J. Fiore (DOE-HQ)

1. An Evaluation of the Metal Cutting Methods Available for Segmenting the EBWR Reactor Vessel During Plant Decommissioning - L.E. Boing, D.R. Henley (ANL)

2. SRS Waste Removal and D&D Program for Underground Tanks, G.H. Street and F.G. McNatt (WSRC)

3. Decommissioning of a Grout and Waste-Filled Storage Tank in the 200 East Area of the Hanford Site - S.G. Marske (WHC)

4. Safe Storage of Deactivated Radiological Chemical Processing Plants in the 200 West Area of the Hanford Site - R.G. Egge (WHC)

5. Decommissioning of the UHTREX Reactor Facility at Los Alamos, New Mexico - Miguel Salazar (LANL)

6. Decommissioning a Nuclear Reactor - Gilbert Montoya (LANL)

7. Remedial Action at the Baker and Williams Warehouses Site - M. Benge (Bechtel)

8. A Case Study: Underpinning of Structures as an Alternative to Demolition/Reconstruction for Removal of Underlying Contaminated Soils at the St. Louis Downtown Site (SLDS) - Antonio Paez-Restrepo (Bechtel)

Tuesday Afternoon, September 10, 1991

X. Achieving Risk-Based Standards
Co-chairs: Curtis Travis (ORNL)
John Lehr (DOE-HQ)

1. Health-Based Cleanup Goals at Hazardous Waste Sites: Implications for Risk Management - Curtis Travis (ORNL)

2. Meeting Health-Based Standards at Hazardous Waste Sites: Are We Deluding Ourselves? - William Wallace (CH2M Hill)

3. Contaminated Sorption/Desorption Rates: Implications for Groundwater Restoration - Paul Roberts (Stanford)

4. The Effectiveness of the Pump and Treat Method for Aquifer Restoration - Carolyn Doty (ORNL)

5. Groundwater Cleanup: The Savannah River Site Experience - Joseph Horvath, Scott Surovchak (WSRC)

6. Panel Discussion:

XI. Site Characterization and Monitoring
Co-chairs: Roger Freeberg (DOE-RL)
Lanny Bates (ORNL)

1. Innovative Investigation Methodologies for Site Characterization - M. Nickelson (MMES)

2. A Macroengineering Approach to Hanford Past Practice Site Cleanup - M.R. Adams (WHC)

3. Siting and Constructing Very Deep Monitoring Wells on the U.S. Department of Energy's Nevada Test Site - James Cullen, R.L. Jacobson, C.E. Russell (DRI)

4. Initial Site Characterization Approach and Preliminary Results 200 West Area Carbon Tetrachloride Expedited Response Action Hanford Washington - V.J. Rohay, M.C. Hagood (WHC)

5. Accelerated Cleanup of the 618-9 Burial Ground at the Hanford Site - J.M. Frain, W.L. Johnson (WHC)

6. Remediation Strategies for Perched Water Bodies Underlying the Idaho Chemical Processing Plant at the Idaho National Engineering Laboratory - J.V. Wozniewicz, D. Findley, W.T. Griffin, T.J. Norton, B. Harrison (Golder); J.L. Williams, C.J. Martin (WINCO)

7. Background Geochemistry at Rocky Flats Plant, Golden Colorado - R.D. Lindberg, R.J. Hoagland P.F. Folger, M.A. Nielsen, M.B. Arndt (EG&G-RF)

8. Site Characterization for Remedial Design at NPL and FUSRAP Sites - Jim Neiheisel (EPA)

XII. ER Approaches and Lessons Learned
Co-chairs: Bill Adams (DOE-OR)
Jack Clark (EG&G)

1. Putting Ecology in Environmental Remediation:The Strategic Planning Process - A. Kapustka, Bill Williams (EPT)

2. Environmental Restoration and Waste Management (ERWM) Success Utilizing Basic Program Leadership Elements - Joseph Grumski (WMCO)

3. Natural Resources Damage Assessment at DOE...John Martin, C.S. Duke, S.I. Gray (ASI)

4. Managing a Site Cleanup Under an Accelerated Schedule - The Lowman Story - Paul Mann (DOE); Denise Bierly (Weston)

5. In Situ Storage:An Approach to Interim Remedial Action Recent Case Studies in Canada - Robert Zelmer (AECL)

6. Surface Water Management at a Mixed Waste Remediation Site - Kenyon Warbritton (JEG)

7. Air Stripping of Volatile Organic Chlorocarbons:System Development, Performance, and Lessons Learned - Scott McKillip (WSRC)

8. Removal Action Under CERCLA Section 104 for PCB Contaminated Soil at the DOE Mound Plant - John Price, S.K. Wilson (Weston); G.T. Farmer (LANL); M. Williams (EG&G); Kleinrath (DOE)

XIII. POSTER - Cleanup Technologies
Chair: J.M. Pope (WSRC)

1. Remediation Technology Needs and Applied R & D Initiatives - J.S. Devgun, S.C.T. Lien, R.S. Levine (DOE-HQ); M.D. Erickson, N.J. Beskid (ANL)

2. Proposed Plan for Vitrification Demonstration of Low-level Radioactive Wastes at the Feed Materials Production Center - Rod Gimpel (WMCO)

3. Selection of Innovative Technologies for the Remediation of Soils Contaminated with Radioactive and Mixed Wastes - John Steude, B. Tucker (Stone & Webster)

4. Preliminary Assessment of Soil Washing for Mixed Waste Contaminated Pond Soils at Hanford - M.A. Gerber, H.D. Freeman, E.G. Baker, W.R. Riemath (PNL)

5. Facility Design to Apply Cover Material Over Radioactive Residue in Storage Silos - Leslie Fekete, R.J. Emerson, L.A. Heckendorn (WMCO)

6. Removal of Heavy Metals and Radionuclides by Seeded Magnetic Filtration - J.P. Bibler, G. Norren (WSRC); D. Bradbury, M.J. Dunn, G.L. Kalinauskas (Bradtech)

7. Sorters for Soil Cleanup - E.T. Bramlitt (DNA); N.R. Johnson (TMA); M.J. Tomicich (M-K)

8. Three-Dimensional, Optimized Computer Simulations of Bioremediation and Vapor Extraction - B.J. Travis and B.C. Trent (LANL)

9. ROSA III Integrated Service Robot - Paul Boone (WEC)

10. Surface Chemistry Studies of Sphagnum Peat:Molecular Mechanisms for Removal of Radioactive and Hazardous Contaminants - Patrick Longmire (LANL)

11. Development of a Treatment System for FMPC Wastewater Discharges - Marvin Gross (WMCO);Stanley Finger(Duratek)

12. Destruction of Complexants Use in Ground Water Contamination - K.M. Hodgson, T.P. Moberg (WHC)

13. Smart Pump and Treat - William Isherwood, D. Rice, J. Ziagos, E. Nichols (LLNL)

14. Visual System for Waste Tank Cleanup - W.J. Millsap (WHC);M.S. Shimamato, E.H. Spain, D.C. Smith (NOSC)

15. Remediation Technology Development from the UMTRA Program - G.R. Thiers, P.K. Chen, D.R. Sanders (M-K)

16. Generation of 3-D Surface Maps in Waste Storage Silos Using a Structured Light Source - D. Jacoboski, R. Markus, B.L. Burks (WMCO);M. Dinkins (ORNL)

17. Utilization of the Magnetic Induced Polarization Technique in Environmental Remediation Problems - D.J. Jin (C-N Geotech)

18. Evaluation of Proposed Designs for Streamflow Monitoring Structures at Waste Site Drainages - D.D. Huff, R.B. Clapp, M.F. Tardiff (ORNL);D.M. Borders (U.Tenn)

19. Integrated Technology Demonstration for the Removal of Uranium Substances from Soils - K.R. Nuhfer (WMCO)

20. The Buried Waste Integrated Demonstration - Kevin Kostelnik, J. Conner (EG&G Idaho)

21. VORCE (Volume Reduction/Chemical Extraction) Technology - Michael Eagle (EPA)

Wednesday Morning, September 11, 1991

XIV. Coping With Regulatory Issues Impacting the ER Program
Co-chairs: Liz Bracken (DOE-RL)
Gary Dintsch (HAZWRAP)

1. CERCLA Integration with Site Operations: The Fernald Experience - S.W. Coyle (WMCO)
2. Successful Integration of the CERCLA and NEPA Compliance Processes in the Weldon Spring Site Remedial Action Project: A Case Study - George Bierman (H&R Tech Assoc.)
3. CERCLA Document Flow: Compressing the Schedule & Expediting the Review at Savannah River Site - W. Dean Hoffman (WSRC)
4. Taking Interim Actions: Integrating NEPA and CERCLA to Move Ahead with Site Cleanup - J.M. Peterson, M.M. McDonell (ANL); S.J. McCracken (DOE);G.L. Valett (M-K)
5. An Overview of PHS Health-Related Activities as They Relate to DOE's Environmental Restoration Program - Paula Kocher, Mark Bashor (ATSDR)
6. Legal Differences Between Surface and Groundwater Remedial Action in Western States - Daniel Dolan (JEG)
7. An Approach to Regulatory Compliance with Radioactive Mixed Waste Regulations - Gary Baker (WVNS); G.S. Mihalovich (Peak Tech); R.B. Provencher (WVPO)
8. Implementation of 29 CFR 1910.120 at a Multiple-Contractor Operator Facility - O.L. Vincent (DOE-FMPO)

XV. Education and ER Methods and Programs
Co-chairs: Donna Campbell (CBC)
Susan Prestwich (DOE-HQ)

1. Environmental Restoration and Waste Management - Texas Chee, Susan Prestwich (DOE-HQ)
2. Historical Genesis of Hanford Site Wastes - Michele Gerber (WHC)
3. Discovering Where the Problem is Hiding: Techniques from FUSRAP - Dan Stout, Charles Young (Weston); A. Williams (DOE)
4. Environmental Restoration Technology Programs at Mesa State College: A Strategic Look at Manpower Needs - Robert Harrison, David Emilia (C-N Geotech)
5. A DOE University-National Lab Waste Management Education and Research Consortium (WERC) - Ron Bhada, J.D. Morgan (NMSU); J. Bickel, D. Banding (DOE)
6. Leveraging Educational, Human Resources, and Organizational Infrastructures to Provide Solutions to Environmental Remediation Manpower Solutions - Gregory Hayward (KEH); William Kinsel (WSU-TC)
7. Educational Programs to Train Hazardous Materials Technicians - Kenneth Ferrigno (CBC)
8. Improving Conduct of Operations in Nuclear Waste Cleanup Projects - R.F. Gessner, J.A. Yeazel (WVNS); T.J. Roland (DOE)

XVI. Cleanup Technologies
Co-chair: Erich Evered (EG&G-RF)

1. Technology Development for a Mixed Waste Disposal Cell - Charles Reith, Lou Gonzales, Marj Wesely (JEG)
2. RDDT & E Integrated Demonstrations. Remote and Robotic Drilling and Excavation Systems - R. S. Leonard (LANL)
3. Robotics Technology for the Retrival of Waste from Underground Storage Tanks - R. MacDonald (SAL); W. Howe (ONT HY)
4. Use of Novel Extraction Chromatographic Resins to Decontaminate Uranium Groundwater - D.M. Einolf, E.P. Horwitz, S.B. Rajkorich (ElChrom); M.L. Diett (ANL)
5. Threshold Limited Kinetics of Aromatic Hydrocarbons in Shallow Soil Systems - Paul Kuhlmeier (M-K)
6. Soil Washing: A Promising Technology for Hanford Cleanup -R.L. Treat (Ebasco); J. Field (WAC); H.D. Freeman (PNL); L. McClung (Cons.)
7. Results of Vitrifying Fernald K-65 Residue - D.S. Janke, C.C. Chapman (PNL); R.A. Vogel (WMCO)

8. Ground Water Extraction, Treatment, and Upgradient Injection Systems Provide a Mechanisms to Control Tritium Plumes at DOE Facilities - Philip Nixon, Lynn St. Clair, Beth Wheat (CTM)

XVII. Environmental Quality Assurance and Data Management
Co-chair: Bob Newell (KEH)

1. A Project's Manager Primer on Data Validation - Sharon Ramos (ASI)
2. Environmental Restoration Project Configuration Control - L.L. Hutterman (WINCO)
3. Environmental Restoration Remedial Action Quality Assurance Requirements Document - Roland Cote (WHC)
4. Compliance with NQA-1 and QAMS-005 Quality Requirements Under the Environmental Restoration Program at the Idaho National Engineering Laboratory - L.R. Dausin, L.L. Hutterman (WINCO); J. Gorman (Golder); G. Mills (Geosafe)
5. Application of Classic Engineering Techniques (Value Engineering and Observation Method) at the Weldon Spring Quarry - Richard Ferguson (JEG); Gene Valett (M-K)
6. RTIS, The Environmental Remediation and Waste Management Technologies Database - Clair Ross, Kerry Klinger, Brian Heyrehd (EG&G Idaho)
7. Data Quality Objectives for Background Soils Data for Environmental Investigation, Restoration and Closure of Contaminated Sites at Department of Energy Facilities - D.G. Dunster, C.R. Wilson, B.F. Russell (Golder)
8. Development of a Consolidated Data Base System for Environmental Data at Oak Ridge DOE Facilities - Larry Voorheas, Raymond McCord (ORNL)

Wednesday Afternoon, September 11, 1991

XVIII. UMTRAP Project Case Studies and Lessons Learned
Co-chairs: Ralph Lightner (DOE-HQ)
Steven Hill (JEG)

1. Laboratory-Scale Tests of a Chemical Barrier for Use at Uranium Mill Tailings Disposal Sites - Robert Spangler, Stan Morrison (C-N Geotech)
2. The Grand Junction, Colorado, UMTRA Program:Engineering Design and Management of Over 4,000 Remedial Action Designs - Mark Marino, Daniel Brennecke (C-N Geotech)
3. Architecture and Environmental Restoration:Remediating Uranium Mill Tailings from Buildings - James Teply (C-N Geotech)
4. Implementation Planning for Remedial Design and Remedial Action at the Department of Energy's Monticello Mill Tailings NPL Site - D. Richardson, H. Perry, J.R. Virgona (C-N Geotech)
5. Completed Remedial Cleanup at the Durango, Colorado Uranium Mill Tailings Remedial Action Site:A Case Study - Steven Hamp (DOE); R. Edge (JEG); M. Thomson (M-K)
6. Uranium Mill Tailings Remedial Action Project Vicinity Property Program - Paul Mann (DOE-AL)
7. Geologic Considerations of Paleophysiographic Features on Remedial Design at UMTRA Sites - Jose Cercone, Partha Sircar (M-K)
8. Determining the "R" in Alara:A Parametric Study to Establish Cleanup Criteria - R. Bonilla, R.T. Johnson, N. Ramachandran (Bechtel)

XIX. Remedy Selection
Co-chairs: N.J. Beskid (ANL);
Jim Buelt (PNL)

1. Hanford Site Past Practice Investigation Strategy - K. Michael Thompson (DOE-HQ)
2. Chaos and Remedial Investigations - Robert Galbraith (IT)
3. Remediation Goals for Radioactive Materials at a Superfund Site - John Frazier (IT), Andrew Avel (DOE-FMPC)
4. Technologies for Remedial Investigations/ Feasibility Studies in the Vadose Zone - J. Conca (WSU-TC), J. Wright (PNL)

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5. Remedial Action Assessment System (RAAS) - A Computer-based Methodology and Database for Conducting Feasibility Studies - James Buelt, J.A. Stottlemyre, M.K. White (PNL)

6. Selection of a Preferred Remedial Well Configuration Using Numerical Groundwater Modeling Techniques - Harvey Dove, R. Spangler, D. Myers, B. Kroutch (IT)

7. The CERCLA ROD for an Operable Unit Remedial Action at the Weldon Spring Site—Lessons Learned - S.H. McCracken (DOE); J.M. Peterson, M.M. MacDonell (ANL); R.D. Ferguson (JEG)

8. Changes in "Selected Remedy" after Record of Decision - R.D. Rowlands, M.C. Butherus (C-N Geotech)

XX. ER Program Compliance Issues
Co-chair: Charlie Sherman (WSRC)

1. Comparison of Federal Facility Compliance Agreements - Denton Lankford (MMES)

2. Tiger Team Findings Related to DOE Environmental Restoration Activities - William Levitan (NUS)

3. Risk Assessment Issues for Cleanup at DOE Facilities - Paul Franco (MMES)

4. Integration of Removal into the Operations at a DOE Facility - O.L. Vincent, Dennis Carr (DOE-FMPC)

5. Management of Petroleum Underground Storage Tanks at the Hanford Site - L.M. Douglas, M.R. Morton (WHC)

6. Characterizing Mixed Waste Sites Under Corrective Action - Case Study:Implementation of Mixed Waste Characterization Plans at the West Valley Demonstration Project - C.J. Roberts, P.J. Gorton (D&M)

7. Overview of the Closure Approach for the Hanford Single-Shell Tank Farms - Edward Smith (WHC)

8. UMTRA Project Management of Residual Radioactive Material Commingled with Hazardous Waste at Vicinity Properties - Charlene Esparza-Baca (DOE); A. Vollmer (Weston)

XXI. POSTER - Characterization and Risk Assessment
Chair: Martin Siegel (PNL)

1. Radon Effects on Cleanup Criteria and Chemical Risk Assessment Using RESRAD, C. Yu, J.J. Cheng, (ANL) and A. Wallo III (DOE-HQ)

2. Long-term Public Health Impacts of Decommissioning the Hanford Surplus Production Reactors:Implications for CERCLA Remedial Actions at Hanford - E.B. Moore (PNL); J.D. Goodenough (DOE-RL)

3. Evaluation of a Contaminant Pathway at a U.S. DOE Site Using Groundwater Chemical Data - Richard Sobocinski, Jonathan Myers (IT)

4. Status of Existing Federal Environmental Risk-Based Standards Applicable to Department of Energy Operations - Gordon Bilyard, Roberta Jonas (PNL); Andrew Wallo III (DOE)

5. Strategy for Integrated CERCLA/NEPA Risk Assessments - M.M. MacDonell, L.A. Haroun, J.M. Peterson, Donald Fingleton (ANL)

6. An Assessment of Baseline Ecological Risks at the Feed Materials Production Center Fernald, Ohio - C.S. Duke (WMCO); L. Meyers-Schone (ASI); S.R. Glume (DOE)

7. Assessing Exposures and Risks in Heterogeneously Contaminated Areas: A Simulation Approach - Donald Fingleton, Margaret MacDonell (ANL); David Butler, Haluk Ozkaynak, Jianping Xue (Harvard)

8. Hanford Cleanup Standards:Technical and Public Policy Issues - W.J. Mallio, E.A. Zabolotny (S&W)

9. Risk Assessment at a Superfund Mixed Waste Site - Samantha Pack, John Frazier (IT); Andrew Avel (DOE)

10. Development of Adjoint Sensitivity Method for Site Characterization Uncertainty Analysis and Code Calibration - Allen Lu (WHC)

11. Soild:A Computer Model for Calculating the Effective Dose Equivalent from External Exposure to distributed Gamma Sources in Soil - S.Y. Chen, P. LePoire, S. Schafett, P. Mechta, C. Yu (ANL)

12. Remedial Investigation for the 200-BP-1 Operable Unit Hanford Site Richland, Washington - Mark Buckmaster (WHC)

13. High Resolution Seismic Reflection Applications for Hydrogeologic Characterizations - B.R. Lewis (DOE-RF)

14. An Integrated Approach for Characterizing Free Product and Related Dissolved Contaminant Plumes - Mark Shupe, Maria Pijnenburg, M. Damian Sandoval, Reid Dennis, Joan VanDervort (J.M. Montgomery)

15. Environmental Soil Sampling Under Storage Using Angeled Auger Borings - W.A. Hertel, G.E. Marshall, J.R. Craig (IT)

16. Drilling and Well Installation Methods for Investigating Subsurface Radiological Contamination - David Aloysius, Francine Cohen (D&M)

17. Electrical Resistance Tomography to Monitor Vadose Water Movement - Abelardo Ramirez, William Daily (LLNL); Douglas LaBrecque (UMO-Rolla)

18. Graphical Presentation of Ferrocyanide Tank Compositions - Monte Crippen, Scott Colby (WHC)

19. Efficiency-Based Groundwater Monitoring Design Using the Monitoring Efficiency Model (MEMO) - Charles Wilson, Carl Einberger (Golder); Ronald Jackson, Richard Mercer (WHC)

20. Use of Lysimeters for Determining Characteristics of Pore Water - Jose Cercone (M-K)

21. Evaluation of a Rapid Headspace Analysis Method for Analysis of Volatile Constituents in Soils and Sediments - William Sims, B.B. Looney, C.A. Eddy (WSRC)

1991 DOE Environmental Remediation Conference Registration

Advance Registration Required—No On-Site Registration Accepted—Total Registration Will Not Exceed 600. Please Print or Type — (Mr., Ms, Dr.)

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Affiliation Fax

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City State Zip Country

Registration is due by 8/23/91.

Meeting Fees:	Cost	No.	Charge
Refreshment Fee (Mandatory)	$33	___	$33
Monday Luncheon	$11.50	___	$___
Tuesday Entertainment:	Cost	No.	Charge
A. Dinner Train	$40	___	$___
B. Dinner Theatre	$40	___	$___
C. Dinner River Cruise	$40	___	$___
Guest Program:	Cost	No.	Charge
1. Tri-Cities Winery Tour	$20	___	$___
2. Art/Foods Tour	$20	___	$___
3. Yakima Winery Tour	$20	___	$___
4. Town & Country Tour	$20	___	$___

(Guest Tour Confirmation & Payment Due By 8/23/91)

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APPENDIX H

FINAL BUDGET REPORT

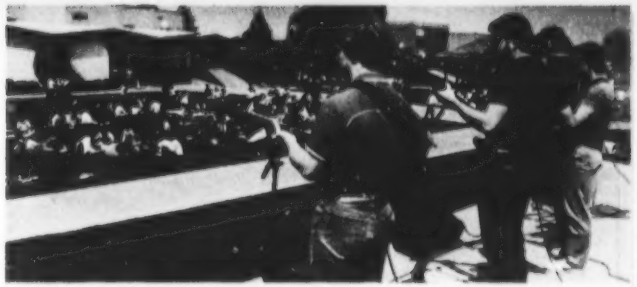
DEPARTMENT OF EDUCATION
HAZARD WASTE MANAGEMENT PROJECT

CATEGORY OF EXPENDITURES	BUDGET	ACTUAL PROJECT EXPENDITURES	BALANCE
SALARIES	54,750.00	54,686.42	63.58
BENEFITS	11,545.50	14,604.70	(3,059.20)
GOODS & SERVICES	8,892.00	6,027.36	2,864.64
TRAVEL	1,732.00	1,599.96	132.04
OVERHEAD	6,153.50	6,154.56	(1.06)
TOTAL	83,073.00	83,073.00	0.00

Upon completion of the two-year study in Hazardous Materials Management Technology, the student will have an Associate of Applied Science Degree. Studies include topics that will prepare the graduate to:

- Understand environmental regulations and requirements
- Help handle, store, recycle, transport, sample and dispose of hazardous materials in the most efficient and cost-effective manner
- Perform site remediation tasks
- Perform inspections for the purpose of maintaining compliance with state and federal regulations
- Select and properly use personal protective equipment
- Understand waste generation and treatment processes
- Act as a first responder or coordinator of hazardous material releases

Columbia Basin College
2600 North 20th Avenue
Pasco, WA 99301
(509) 547-0511



Columbia Basin College

More than 150,000 students have attended Columbia Basin College since it was established in 1955.

The city of Pasco donated an expanse of sand and sagebrush land adjacent to the Tri-Cities Airport as the site for the college.

The campus is located on 155 acres of beautifully landscaped ground in Pasco and a four-building, two-acre satellite campus in Richland. The college operates on a budget in excess of $12 million and has an enrollment of about 5,500 students each quarter. Sixty percent of the students are enrolled in academic transfer programs and forty percent are in vocational/technical programs. The instructional staff now includes more than 300 full and part-time teachers.

Columbia Basin College is an accredited, comprehensive two-year college where students may earn associate degrees in nearly 40 fields of academic study and are able to transfer credits to most four-year colleges and universities.

The college offers 28 vocational/technical education programs that prepare people for employment.

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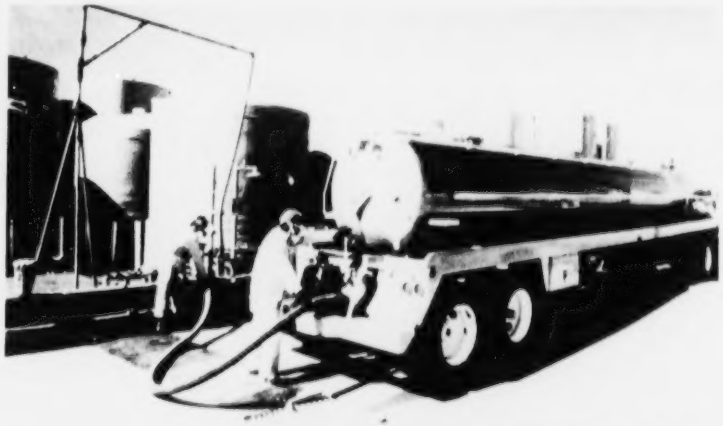
Hazardous Materials Management Technology

Columbia Basin College

Hazardous Materials Management Technology

Every day in our nation and community, companies involved in industries such as chemical manufacturing, petroleum refinement, and metal processing produce, handle, and transport hazardous materials which are vital to the lifestyle many Americans enjoy.



Every year, 270 million metric tons of waste classified as hazardous are produced in the United States. That's more than a ton of waste for every man, woman, and child in the country.

Managing these hazardous materials and wastes means dealing responsibly with the by-products of our industrialized society. When waste and hazardous materials are not properly managed, spills and accidents occur, polluting air, waterways and land.

Industrial societies produce chemicals and generate wastes in order to produce goods and services to meet the demands of our modern standard of living. Improvement is needed in minimizing waste and managing hazardous materials using highly qualified and trained technicians. Working towards a solution to pollution takes knowledge, courage and technical expertise. Columbia Basin College's Hazardous Materials Management Technology Program prepares individuals to become a part of the 18 billion dollar a year Hazardous Waste Management Business.

Environmental regulations are increasing and becoming more complex, creating many opportunities and a large demand for trained technicians.

In addition to the two-year AAS degree, Columbia Basin College offers short courses covering selected topics in Hazardous Materials and Waste Management. Please call our staff if you have any training needs.

Columbia Basin College maintains a list of volunteers who will speak to community groups, special interest groups, and schools on topics such as underground storage tanks, emergency response, hazardous materials, waste minimization, and radioactive waste management, as well as others. Please call the Hazardous Materials staff at (509) 547-0511 to discuss your environmental education and training needs.

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